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## Part First.

### ORIGINAL COMMUNICATIONS.

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#### I.—A CASE OF MYOMECTOMY FOR A LARGE FIBROCYSTIC TUMOUR OF THE UTERUS.

By N. T. BREWIS, M.B., F.R.C.P.E.

*(Read before the Edinburgh Obstetrical Society, 9th April 1890.)*

IN May 1888, Miss M., an unmarried lady of 43 years of age, consulted me on account of abdominal enlargement. She stated that she had noticed the swelling for four years, and that it caused her no pain. Menstruation was regular, the discharge moderate in quantity, lasting from two to three days.

On physical examination the abdomen was found to be enlarged in an irregular manner to a point about 3 inches above the umbilicus. A hard nodular swelling about the size of an orange was felt in the hypogastric region, separate from the upper part of the enlargement which was evidently made up of two large sub-peritoneal fibroids. The circumference 2 inches below the umbilicus was 40 inches. The vaginal portion of the cervix was pulled up above the pubis. A hard nodule was felt in Douglas's pouch, and appeared to be continuous with the swelling in the hypogastric region. The uterine body could not be differentiated.

The diagnosis made at this time was that the patient had three sub-peritoneal fibroids growing from the posterior surface of the uterus, two of which grew upwards, while the third grew chiefly downwards into the pelvic cavity. As the patient's condition gave rise to little inconvenience and to no urgent symptoms, treatment at this time was unnecessary.

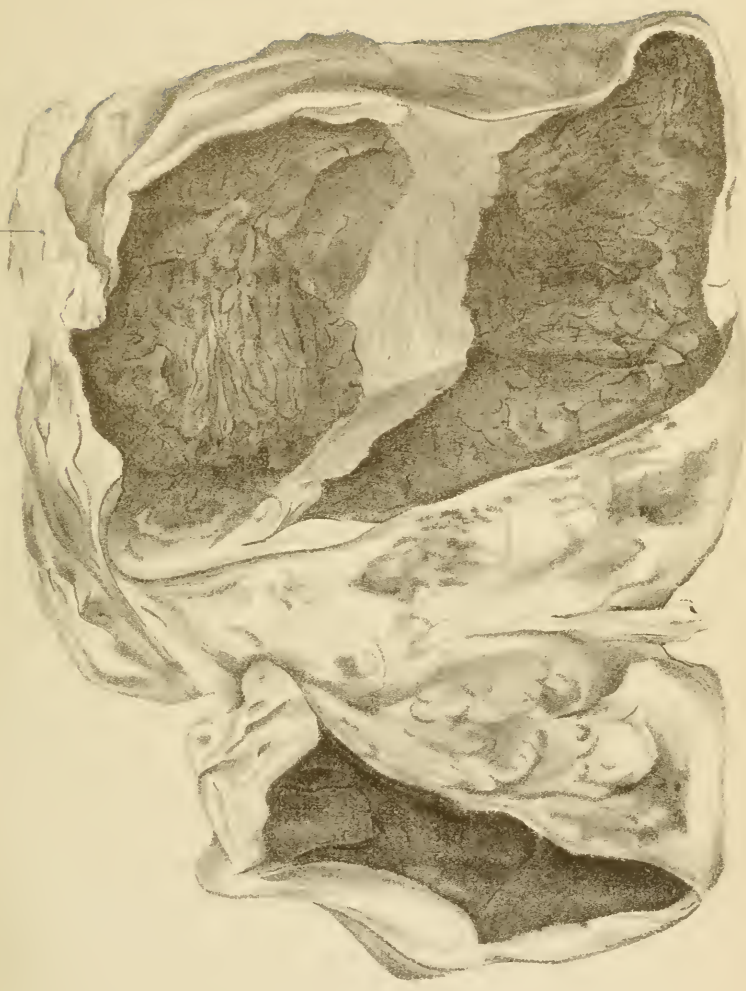
The next time I saw Miss M. was about two months ago, when she came to tell me that the swelling had grown very much lately, and that, on account of its size, it was now a great inconvenience to her, that she had great difficulty in walking, and that it inter-

ferred with her breathing. She expressed herself willing to submit to any operation, and to run any risk for the chance of getting relief. On examining the abdomen I found that it was enormously distended, the upper part of the swelling reaching to the ensiform cartilage, and at the sides, especially the left, extending well down into the flanks. On palpation, the characters of the swelling were felt to be quite different from what they were two years before. Then the tumours were of hard consistence; now, two large cysts, one occupying the greater part of the left side of the abdomen extended into the left hypochondriac region and left flank, the other filled the whole of the right side and extended upwards beneath the ribs. Fluctuation was well marked in both cysts. A third swelling was felt in the right iliac region, partly solid and partly cystic, running down into Douglas's pouch, where fluctuation was well marked. The enlarged uterine body occupied the hypogastric region.

22 The question of diagnosis now presented itself. In looking over  
36 the record of cases of fibro-cystomata in recent literature, I find  
1-6 that, previous to opening the abdomen, nearly every case had been  
diagnosed as ovarian. In my case if I had not seen the patient two years ago, when there was little doubt that she had fibroid disease, I would certainly have said that she had an ovarian cyst. As it was, I was in doubt as to whether there was not a co-existence of ovarian cystic with fibroid disease of the uterus. Believing as I do that you can only with certainty diagnose any intra-abdominal condition after you have entered the abdominal cavity, in this case I reserved my diagnosis.

On the 22nd of February, assisted by Mr T. Macdonald and Dr A. Thomson, I opened the abdomen. The abdominal walls were very vascular—a circumstance which points to fibroid disease—and the peritoneum was deeply red in colour. The tumour was found to consist of three portions, two of which were almost entirely cystic, one occupying the left and the other the right side of the abdomen, while the latter was continued down into the pelvis. The third was smaller than its neighbours, and lay in the left iliac fossa, while all three were connected to the right posterior part of the fundus by a pedicle about 2 inches long and  $1\frac{1}{2}$  inch thick. The uterus was enlarged to about twice the normal size, and was drawn upwards by its connexion with the tumour. The omentum was firmly adherent over the whole of the anterior and lateral surfaces of the two large cysts, its bloodvessels were greatly dilated, its lymphatics enormously so—being as thick as the little finger and in clusters attached to the upper surface of the tumour. The tumour was also entirely adherent to the peritoneum along its left lateral border, and also posteriorly to the whole of the posterior pelvic wall down to the foot of Douglas's pouch. The largest cyst was tapped, and about two pints of bloody serum removed. The flow came in a small intermittent stream, and as the cyst was very little diminished by the tapping

*Omentum*





the incision was extended to 3 inches above the umbilicus. The tumour was now forced through the wound and the omentum ligatured. The tying of the omental vessels occupied a long time, as nearly every vessel was secured separately with a double ligature. This is absolutely necessary, as these vessels bleed both ways, *i.e.*, from the tumour itself as well as from the omental side. The vessels were divided between the ligatures. The peritoneal adhesions also gave a great deal of trouble, especially in the pelvis. Ultimately the tumour was separated and cut away after its pedicle had been secured in a Kœberle's wire constrictor. Many of the adhesions and omental vessels had to be tied over again, and a rent in Douglas's pouch about 3 inches in length required, on account of persistent oozing, to be stitched with fine silk. The abdominal cavity was then freely flushed with hot water, and the wound closed after the pedicle had been transfixed with pins. A drainage-tube was left in.

The operation lasted over four hours, the greater part of which time was taken up in tying adhesions, over 150 ligatures being left inside the abdomen. Hot water, without any antiseptic, was used during the operation for the sponges and for flushing the abdomen.

The patient has made an uninterrupted recovery. The highest temperature registered was 99°·4. The drainage-tube was removed on the second day, and the clamp on the fifteenth day.

*Description of Tumour—Naked Eye.*—The tumour weighed 20½ pounds, and contained about 12 pints of bloody serum, which on standing did not coagulate, and on microscopic examination showed broken down blood corpuscles. After evacuation of the fluid the main part of the tumour appears ovoid in shape, and measures about 13 inches in length. The upper half of the anterior surface is covered by omentum, which is in some parts firmly adherent to the tumour. Also attached to the upper part of the tumour is a piece of peritoneum about 6 inches square. The surface of the upper part is smooth, that of the lower is nodular. Attached to various parts of it are broad peritoneal bands. On section the main part of the tumour is found to be divided by a band of fibroid tissue, about 2 inches in thickness, into two compartments, the upper being the larger. Both compartments were filled with bloody serum contained in a fine trabecular meshwork, formed of what appeared to be softened muscular tissue. (This meshwork explains why the blood did not flow freely from the cyst when tapped.) The meshwork is separated from the wall of the cyst by a thin layer of what appears to be degenerated capsule. The contents of the cyst attached to the main tumour were blood and red pulpy material. There was no meshwork, and the degeneration appeared to be in a more advanced stage.

*Microscopical.*—Dr Woodhead very kindly undertook to make a microscopical examination of the tumour, and the following is his report :—

Specimen I. is taken from a nodule growing from the outer



aspect of the cyst wall, and represents the degenerative process at an early stage. Specimens II. and III. are from the margin of the band of fibro-myomatous tissue stretching across, and dividing into two compartments, the main part of the tumour. These specimens show the process at more advanced stages.

*Specimen I.*—Outer portion of tumour consists of bundles of non-striped muscular fibre interlacing in various directions. A small quantity of fibrous tissue between the bundles, nearer the centre the fibrous tissue becomes much more marked, and the muscular bundles are much smaller. Passing still nearer to the centre the fibrous tissue becomes more homogeneous looking, and in some cases is of a distinctly mucoid character. Where this is the case the muscular tissue is undergoing degeneration, and there are also small collections of brown pigment. This is evidently a process of degeneration towards the central part of tumour; this process is always most marked at the margins of the cavity, from the wall of which this muscular mass is taken. In this piece there are no traces of hæmorrhage. The vessels in the tumour are fairly numerous, and some of considerable size. Where the mucoid change is well marked the nuclei have entirely disappeared.

*Specimen II.* shows exactly the same thing, except that in this specimen we have several areas of fibrous tissue, increased mucoid softening, and muscular degeneration. Even the walls of the vessels in Specimen II. are undergoing a hyaline or mucoid change, and in this case there is a little mass of blood surrounded by a hyaline mass. In all cases there seems to be degenerative change in the walls of the vessels.

*Specimen III.*—In section 3 we have the appearance presented in number 2. From a part of the wall near the cavity there is a mass of broken down red blood corpuscles, the result of hæmorrhage. The mucoid change very well seen, but there is something that is not seen in any of the other specimens. A very considerable increase of cells, small oat-shaped cells, almost like those of granulation tissue, a number of large spindle cells, and at one point a number of round cells. This granulation-like tissue appears to be invading on the fibroid or mucoid tissue, it is perfectly distinct from the granular masses imbedded in the mucoid tissue, which must be looked upon as remains of muscular fibre. It is much more like sarcomatous tissue. Dilated sinus-like blood-containing spaces are very numerous in this granulation tissue mass.

In Specimen III. granulation tissue is present, which Dr Woodhead says is sarcomatous in appearance. From these sections we gather that the process consisted in mucoid degeneration of the fibrous tissue and walls of the bloodvessels, with the subsequent development of sarcomatous cells. In the muscular fibres the degeneration was less marked. In the cyst cavity the whole of the fibrous tissue had softened and disappeared. Hæmorrhage, with resulting debris, followed the mucoid change in the walls of



the bloodvessels. The trabeculæ, which stretched across the cavity, must be looked on as degenerate muscular fibre. The tumour must therefore be considered a *myxosarcoma*.

In conclusion, I may remark that fibro-cystic tumours do not disappear after the menopause, and if left alone they prove fatal. Removal of the appendages does not stop their growth, electrolysis could only be dangerous, medicines are useless, so there is no treatment short of removal of the tumour.

Some may question the way in which the pedicle was treated, and ask why I did not adopt the intra-peritoneal method in a case which appeared so suitable for it. My answer is that I followed the extra-peritoneal plan to save time, and because I knew it was perfectly safe. The patient's excellent recovery I attributed to three things—Firstly, to the careful tying of the adhesions; secondly, to the free flushing of the abdominal cavity with hot water; and, thirdly, to the non-use of antiseptics in the abdomen. The drawing which I show you, and which is an excellent representation of the tumour, was very kindly executed for me by Mr Angus Macdonald. To Dr Woodhead my best thanks are due for his great kindness in making the microscopical examination.

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## II.—NOTES OF A CASE OF BURN CICATRIX OF THE LOWER LIP TREATED BY TEALE'S METHOD.

By J. CRAWFORD RENTON, M.D., Assistant to the Professor of Clinical Surgery in the University of Glasgow; Additional Examiner in Clinical Surgery in the University of Edinburgh; Assistant-Surgeon to the Western Infirmary, Glasgow.

E. B., æt. 21, was admitted to the Western Infirmary in July 1881 on account of a deformity of her lower lip, which had existed for eleven years, and resulted from an extensive burn with paraffin which had exploded. The lower lip was completely everted and drawn downwards towards the sternum, being fixed there in all directions by dense cicatricial bands extending over the chest; the lower jaw was also everted from the continued dragging, and she was unable to retain any fluid food in her mouth even when she bent her head downwards, which diminished to some extent the eversion.

Dr Graham of Paisley, under whose care she was at the time of the accident, kindly wrote with regard to her case. "Eighteen months after the accident I operated on the deformity by dividing the cicatricial tissue and bringing two flaps of sound skin from the side of the neck to fill up the gap; a portion sloughed, and a certain amount of improvement was obtained. The eversion of the eyelids was benefited by Sanson's operation."

Fig. 1 represents her appearance in July 1881 when she was admitted to Professor Buchanan's ward.

The following operation was performed as a preliminary to Mr Teale's:—Having divided the main mass of adhesions to the sternum, I dissected up a small remaining portion of sound skin on each side of the neck, and these were united in front; the gap was thus partially filled up, and although the entire flaps did not unite, still with the addition of a few grafts of skin from the arm a certain amount was gained, and the patient was sent home for two months.

On December 1st, the following operation was performed with the assistance of Dr Beatson and the late Dr Lyon:—The everted lip was divided into three equal parts, the alveolar portion of the central part was freely incised, and two vertical incisions, each an inch and a half long, were made down to the bone from each end of the central one, and then carried upward to a point one inch beyond the angle of the mouth. The flaps thus marked out were dissected up, brought over the everted lip, and united by a few points of silver suture, one being placed deeply to give support. An apparatus constructed by Mr Hilliard was used to ensure fixity of the head during the healing process, which is much insisted upon by Messrs Earle, Gordon Buck, H. James, and Francis Mason, who have all written valuable papers on burn cicatrices and their treatment.

The parts healed by first intention, and the patient was dismissed on 5th January 1882, with her appearance improved, able to open and close her mouth, and to retain fluid food in it.

Fig. 2 shows the result of the operation nine years after its performance; the patient continues as well as she was three months after, which is a very strong tribute to the value of the late Mr Teale's operation.

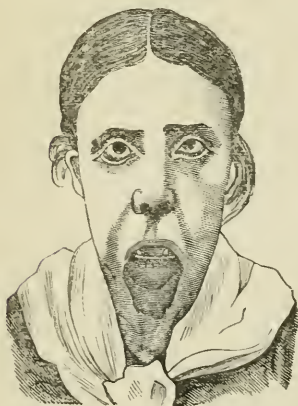


FIG. 1.

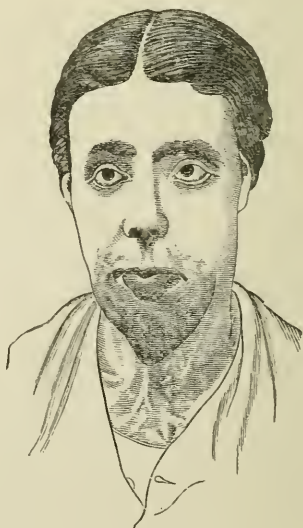


FIG. 2.

## III.—SOME SEQUELS IN THROAT SURGERY.

By G. HUNTER MACKENZIE, M.D., Laryngist to the Eye, Ear, and Throat Infirmary of Edinburgh; Teacher of Practical Laryngology and Rhinology in the School of Medicine, Edinburgh.

It has occasionally been asserted that the publication of cases involving operations before time has tested the results leaves us very much in doubt as to the ultimate success of the treatment or the permanency of the cures. It is frequently no easy matter to follow up such cases after their discharge, more especially in public practice; and this difficulty may be, and doubtless often is, the principal reason why long-after results are not more frequently reported by surgeons in the medical press. The hasty publication of isolated or even collected cases, now unquestionably so much in vogue, is undoubtedly to be deprecated, calculated as it frequently is to lead to unwarranted conclusions and to the inculcation of erroneous principles.

These objections may be obviated by one or other of two methods—by delaying the original publication until sufficient time has elapsed after the operation to enable accurate conclusions to be arrived at, or by the publication from time to time of short sequels in the journal in which the case was originally reported. In at least one of the London Societies the narration of sequels to cases previously reported has become a prominent feature of the work done. Following on the same lines, I now publish the following sequels of cases, the primary reports of which have appeared in this Journal on different occasions during the last seven years:—

1. *Sequel to a Case of Thyrotomy for Recurrent Growths in the Larynx* (previously reported in December 1887).

In this case, in which thyrotomy had been twice performed for papillomatous growths in the larynx, a recurrence had taken place, but in a different situation from that of the previous growths. The former report left the patient with a sessile papillomatous growth, about the size of a pea, springing from the posterior third of the left vocal cord, and tracheotomy was contemplated, with the view of relieving any embarrassment of breathing that might ensue, and in the hope that the growth might subsequently spontaneously disappear, as in Case 6, *infra*.

Since the case was reported I have examined the patient twice, the last occasion being on 24th January of the current year. The sessile growth was still present on the left vocal cord. There was no dyspnoea, and the voice was whisperingly aphonic. Tracheotomy had not been required; the growth was no larger than as stated in the previous record. There had been recurrences of slight dyspnoea, and from time to time portions of the growth had been expectorated, which relieved the breathing. The general health was good, and, except as regards its effect on the voice, the growth appeared to

cause, on the whole, little inconvenience. The unimpairment in mobility of the cord, so different from what is witnessed in malignant growths, was still a welcome feature of the case.

Here was witnessed the material influence upon the respiration exercised by the locality of the growths. Situated at the anterior commissure, and wedged in, as it were, between the convergent vocal cords, they grew luxuriously without detachment of particles, and thus induced severe dyspnœa. But when the development of the growth took place from the posterior third of the vocal cord, it had not the same mechanical support as in the first instance, and being in addition exposed to stronger respiratory currents, it was from time to time readily broken up and expectorated. The locality or situation of laryngeal growths has thus some prognostic value, more especially in regard to the degree of respiratory impediment that is likely to ensue.

2. *Sequel to a Case of Chronic Laryngitis, probably Tubercular; Tracheotomy; Removal of Warty Growth from the Posterior Third of the Left Vocal Cord* (previously reported in July 1888).

This patient underwent tracheotomy at the Eye, Ear, and Throat Infirmary on 6th April 1887, and had a growth removed from the vocal cord by endo-laryngeal means on 6th January 1888.

He improved remarkably after these operations. Attempts to remove the canula were unsuccessful. He could breathe perfectly well with the tube plugged, but when its permanent withdrawal was essayed the ensuing dyspnœa was so intense that its reinsertion was necessary. This patient has not been heard of since May 1889. He was then seen amusing himself in the Queen's Park, Edinburgh, apparently quite well. A tube was at that time still worn.

This case is an example of the beneficial results which sometimes ensue from the surgical treatment of tubercular laryngitis. Not only was the breathing relieved by the operation, but the further development of laryngeal and pulmonary tubercular disease was apparently arrested.

3. *Sequel to a Case of Endo-laryngeal Removal of a Myxomatous (Cystic) Growth from the Left Vocal Cord* (previously reported in July 1888).

The operation in this case was performed at the Eye, Ear, and Throat Infirmary on 2nd March 1888. The patient was last seen and examined about a year and a half subsequently; complete recovery in all respects had ensued.

4. *Sequel to a Case of Lupus of the Larynx necessitating Tracheotomy* (previously reported in October 1885).

As previously reported, tracheotomy was performed on this patient



in October 1884, and the concurrent lupus of the cheek was successfully treated by scraping. The patient, who attended from time to time at the Eye, Ear, and Throat Infirmary, improved considerably, so far as his general health was concerned, but the condition of the larynx remained unaltered. During 1886 and 1887 he was able to fill the situation of light porter in a shop. In July 1887 he commenced to complain of pain all over his head, and in the following month (August) he was suddenly seized with convulsions, ending in coma, from which he never emerged. A necropsy was not obtained, and as the convulsions were not witnessed by a physician, it was impossible to form an opinion as to their precise nature and cause. A medical friend, who supplied me with short notes of his last illness as narrated by his relatives, states that the patient was completely comatose before professional advice was sought.

5. *Sequel to a Case of Tracheotomy for Impaction of a Pin in the Larynx* (previously reported in November 1884).

The patient, a child of 3 years, underwent tracheotomy in March 1884. He was seen and examined at the Eye, Ear, and Throat Infirmary on 17th April 1890 (six years subsequently), and found to be in good health. Occasionally he had nocturnal attacks of "crowing," indicating some respiratory spasm; this was more liable to occur if during the day he had been tired or annoyed in any way. In development he appeared quite equal to a brother two years older.

In a most interesting paper by my colleague, Dr Maxwell Ross,<sup>1</sup> attention was called to the occurrence of post-tracheotomic vegetations or growths, and to their influence upon the respiratory functions. Dr Ross also observes that some writers on this subject have declared that children who have undergone tracheotomy seldom attain to maturity. In this case we have been unable to detect any vegetations in the trachea, and the development and health of the child have hitherto been remarkably good. A condition of recurrent spasm of the larynx or trachea, or both, is the only sequela present, and as this is gradually becoming less pronounced, there is every probability of its ultimate complete disappearance. In the meantime it may be considered as a functional post-tracheotomic sequela.

6. *Second Sequel to a Case of Tracheotomy for Stenosis of the Larynx after Measles* (previously reported in October 1883 and November 1884).

A boy of 5 years, a patient at the Western Dispensary, had tracheotomy performed in April 1883 for stenosis due to papillomatous growths in the larynx after measles. The purport of the

<sup>1</sup> "Sequelæ of Tracheotomy occurring after Closure of Tracheotomy Wound," by J. Maxwell Ross, M.B., F.R.C.S.E., *Edin. Med. Journal*, March 1883.

previous report was that he wore the tube for a year, during which time the growths spontaneously disappeared, enabling the tube to be ultimately dispensed with. No organic or functional sequelæ have developed, and the boy has ever since enjoyed excellent health.

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**IV.—A CASE OF GUNSHOT INJURY IN WHICH A PIECE OF LEAD REMAINED EMBEDDED IN THE SKULL FOR THIRTY-ONE YEARS.**

By DAVID M. GREIG, M.B., F.R.C.S. Ed., Dundee.

THE following case is, I think, worthy of being recorded on account of the length of time the piece of lead remained in the bones of the skull, the few symptoms to which it gave rise, and the difficulty which was evidently experienced in attempting its removal.

Sergeant D. C., formerly of the 2nd Bengal European Fusiliers, formed one of a storming party at the siege of Delhi on 14th September 1857. He was running towards the walls with his head bent down in the act of loading his musket, when he was struck on the head by a leaden bullet. He was rendered unconscious for a minute or two, but soon recovered consciousness, and while a comrade was bandaging the wound he received a wound from a musket shot in the left forearm. He was taken to the field hospital, where a round musket bullet was extracted from his left forearm, and where the surgeon "found the skull fractured and raised up, and he replaced it." No further attention seems to have been paid to the head injury, and after a stay of three months in hospital he returned to duty, the wound in his head not having healed. Soon after this a native barber, while shaving the scalp round the wound to facilitate dressing, discovered a piece of lead sticking firmly in the wound. The patient then returned to hospital, where two unsuccessful attempts were made to remove the foreign body. On account of this injury he was discharged from the army in 1859, and soon afterwards came to Dundee, where he obtained work in a calender. This work, however, he was soon obliged to abandon, as any attempt to lift heavy weights made the wound bleed rather freely. From then till his death he was employed as a gatekeeper. The wound never entirely healed.

He first came under my notice in 1880, and at that time he had an open wound about the size of a shilling on the vertex in the line of the sagittal suture just behind its junction with the coronal suture. The wound was surrounded by cicatricial tissue, and presented a few weak granulations. In the floor of the wound, firmly embedded in the skull, was a piece of lead about a quarter of an inch in diameter. This could be scratched with a knife, and gave the characteristic mark to Nelaton's probe. There was a slight purulent







discharge from the wound, but otherwise he suffered no inconvenience from it. Venous oozing accompanied by giddiness and faintness occurred on the patient making any extraordinary effort, especially if made in the stooping posture. As any pressure on the lead caused considerable oozing, and as the patient was averse to any operation, no further attempts at removal were made. From this time till his death, which occurred in 1888 from an abdominal complaint, there was little change in the above condition, except that the cicatrix became slightly more depressed from absorption of the surrounding bone. I made the accompanying sketch from the post-mortem preparation. Evidently the bullet had struck the right parietal bone obliquely about three-quarters of an inch from the coronal and half an inch from the sagittal suture. It had passed backwards and to the left, grooving the bone until it reached the sagittal suture, where it had produced a depressed fracture, the portion displaced being about the size of a shilling. In the posterior and deepest part of the depression, firmly embedded in the bone and exactly above the superior longitudinal sinus, was a piece of lead four-tenths of an inch long and one-tenth broad. Close to the piece of lead was a small foramen, which allowed the passage of a small vein to the longitudinal sinus. Probably after producing the fracture the bullet had split, and the smaller portion had remained embedded in the bone. Originally the piece of lead must have been considerably larger, as on many occasions small pieces had been removed by scraping with a knife. The sagittal suture in the neighbourhood of the fracture, as can be seen in the sketch, had been considerably obliterated.

The inner surface of the skull presented a prominent irregularity corresponding to the depression seen on the external surface.

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#### V.—NOTE ON VACCINIA OF THE EYELIDS.

By GEORGE A. BERRY, M.B., Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

I HAVE not been able to find any reference, in the different text-books on diseases of the eye, to the accidental occurrence of vaccine pocks on the eyelids. I am inclined to think, however, that such an accident is by no means so rare as this would appear to indicate. Possibly a good many cases do not come under the notice of the ophthalmic surgeon at all, but are recognised and treated by the family doctor. I have seen in all five well-marked cases. Four of these occurred in women, one was a man of 30.<sup>1</sup> In all there

<sup>1</sup> In my book on *Diseases of the Eye* there is a sentence in the paragraph devoted to chancres and vaccine pocks of the lids which somehow has got transposed, and which I take this opportunity of correcting. The sentence is as follows: "I have seen it in both adults and children." This should have come after instead of before the next sentence, as it refers to chancres and not to vaccinia.

was a distinct history of inoculation, or rather of the possibility of inoculation. A child had been vaccinated ten or fourteen days before the patient was seen. In all the pock occurred on the lower lid, but there were also to be found one or more ulcerated patches on the margin of the upper lid where it came into contact with the macerated surface of the primary vaccine ulcer. The swelling was always great, and involved not only the lids, but also the cheek. The base of the ulcer was decidedly harder than the surrounding swelling, but not so distinctly indurated as in the case of chancre of the lid, and the glands were not swollen. There was, comparatively speaking, very little pain; practically no spontaneous pain, and but little tenderness to touch. In no case was the eye affected. The affection never led to any alteration in the position of the lid, and even the cicatrix left was slight, barely perceptible, owing no doubt to the laxity of the skin in this situation.

The main interest in these cases consists in the possibility of the inoculation taking place at all, and in the differential diagnosis between vaccinia and a primary syphilitic sore. As to the manner of inoculation, in three of my five cases this could not be satisfactorily ascertained; in one there was little doubt that a direct transference of lymph took place owing to the child's arm being often in contact with its mother's face; in another the handkerchief used for wiping the vaccinated arm was admittedly used by the mother also.

Chancres of the lids, to judge from one's own experience, are of decidedly more frequent occurrence than vaccine ulcers. For the reasons above stated, this may, however, be only apparent. It is not unlikely that vaccine pocks in this situation have sometimes been mistaken for syphilitic sores. The latter is always a more distinctly clean-cut, eaten-out ulcer, which has taken a considerable time to develop from its first appearance as a pimple at the lid margin. The opposite lid margin is not ulcerated as a rule. The base of the ulcer is greatly indurated, and the preauricular, as well often as the submaxillary glands, are swollen. There is no history which can in any way connect the case with vaccination, and usually one which renders a syphilitic contagion possible. Lastly, secondary symptoms appear in due course.

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## VI.—NOTES OF A CASE OF CARCINOMA OF SUPRA-RENAL CAPSULES AND LUNGS; KIDNEYS FREELY MOVABLE.

By JAMES RITCHIE, M.B., M.R.C.S. Eng.

Pathological Report by ALEXANDER BRUCE, M.D.

(*Read before the Medico-Chirurgical Society of Edinburgh, 15th January 1890.*)

Miss K. M., æt. 73, prior to her more severe symptoms, had been gradually losing flesh and strength for about a year. She had,

however, been able to perform her household duties, which were not heavy, except that she had been somewhat severely taxed in nursing an aged invalid relative. In addition to loss of flesh and strength she complained that her breathing was shorter than it used to be, especially after exertion. On March 20, 1889, she complained of sickness, occasional diarrhoea, complete absence of taste, dryness of mouth, discomfort in the epigastrium, and severe pain across the sacrum and down both outside and inside of left thigh.

On examination her temperature was normal; she was much thinner than when she was examined a year previously; the tongue was dry, rather furred, especially on the left half. This continued throughout the illness, and for it no local cause could be discovered. Pressure on epigastrium revealed tenderness, and produced catching of the breath and a short dry cough. There was no enlargement of liver. The urine was scanty, high coloured, acid, depositing pink urates. Respirations, 25, easily excited; frequent dry cough; no dulness on percussion; on auscultation a few sibilant râles. The treatment consisted in rest, simple diet, turpentine stupes to painful parts, sedatives to stomach, and alkalies.

A few days later, without known exposure, there was a sudden rise of temperature to  $101^{\circ}$ , with all the signs of acute bronchial catarrh. Under ordinary treatment this quickly subsided, and the temperature became normal. During the succeeding four weeks, and, indeed, throughout the illness, there was great variability of symptoms, referable to the digestive system; at intervals of about a week there occurred sudden change from a condition of comparative comfort to sickness and diarrhoea, or diarrhoea alone—these attacks being generally accompanied by pains in one or both thighs. Upon one occasion, having been called in consequence of an exacerbation, when the abdomen was being examined there was felt in the left iliac fossa a firm mass, tender on pressure. The patient was at the time lying partially on the right side; when she moved on to the back to permit of further examination the tumour disappeared. Closer investigation showed that we had to do with movable kidney, which could be readily slipped downwards and forwards when the patient lay on the side, and which resumed the normal position when the dorsal decubitus was taken. It was further observed that the right kidney was nearly as mobile. The patient had never prior to her illness suffered discomfort on assuming the erect posture; but by-and-by, when she was allowed to sit up and to get out of bed, she experienced pain and a sensation of sinking, unless she wore a flannel bandage with pads to keep the kidneys *in situ*.

Towards the end of April there was an improvement in symptoms relating to the digestive organs, with return of taste. Miss M. was therefore allowed to go to the couch; but without any

known exposure the temperature again rose to  $100^{\circ}$ , or a little above it; the cough became more troublesome; sputum scanty, white, gelatinous, never bloody. Examination of the chest revealed feeble expansion at both apices, dulness on percussion, prolonged expiration, harsh breathing, and increased vocal resonance. Examination of the rest of the chest showed nothing marked beyond a somewhat feeble expansion. No bacilli were found in the sputum.

During the next few weeks the temperature was frequently a little above normal in the afternoons. After consultation on May 22, it was agreed that there was some inflammatory process of a low type going on at the apices; the patient was recommended to go to the country, where a little open-air exercise could be had without fatigue. The medication had been Begbie's mixture.

A few days after going from home viz., in the beginning of June, there was a recurrence of gastro-intestinal disturbance, which kept her confined for a week. She was next examined on June 22, at which time the condition of the apices was unchanged; nothing special was noted in the condition of the rest of the chest. She again went to the country, and on her return she was placed under the care of Dr Playfair in consequence of Dr Ritchie's absence from town. When she was next examined it was found that she had deteriorated very considerably. Epigastric tenderness was marked, and there was found on palpation a nodular swelling indistinctly felt in the epigastrium. The liver was not enlarged. Examination of the chest revealed feeble expansion all over, with impaired percussion note, the respiratory murmur feeble and harsh; respiration very rapid and shallow, amounting to dyspnoea, and causing a considerable amount of suffering; cough short, dry; expectoration scanty, with the same characters as formerly. The temperature was always now above normal, varying from  $99^{\circ}$  to a little above  $100^{\circ}$ . The pulse rapid and feeble. The patient gradually sank, and died of asthenia on August 20.

When Dr Ritchie asked his friend Dr Bruce to make a post-mortem examination, he said that he had to acknowledge an uncertainty as to the probable conditions which would be found. Carcinoma of the stomach was expected—not of the pylorus, but of the body of the organ. At the same time there were difficulties in the way of this diagnosis. The gastric troubles had been frequent and various, but they had not presented the degree of severity which is common in carcinoma. There was no pain after food; there never had been vomiting of blood; and examination of the stools by means of the guaiacum test had not shown blood.

As to the condition of the lungs, although the dulness had first appeared at both apices, the absence of high temperature and the character of the sputa were against the diagnosis of acute tuberculosis. The cachexia, the extensive dulness, the greatly impaired



lung function, and the probable existence of cancer in the stomach, rendered the diagnosis of secondary cancer more probable. It is to be noted that there never was any blood in the sputa.

The movable condition of the kidney was one of great interest in consequence not only of its comparative rarity, but also of the very considerable amount of displacement which was possible, the facility with which the change could be made, and the precise position of the organ determined in consequence of the thinness of abdominal parietes, also the development of the condition after the patient had lost the natural fat. Of 91 cases collected by Ebstein, in 12 only were both kidneys movable.

In view of the condition of the supra-renal capsules which was revealed at the post-mortem examination, it is worthy of note that there was no pigmentation of the skin nor of mucous membrane; that the loss of strength was in proportion to the loss of flesh which preceded it; that there was no marked anæmia; the heart's action and the pulse were good until near the fatal termination; there was no palpitation, no faintness nor giddiness, no dimness of vision beyond that which had been present for years. Hiccough was, however, occasional. The pulse-rate up to near the close of the case was usually about 90. The symptoms were thus not at all characteristic of Addison's disease. Dr Wilks has pointed out that in cancer of the supra-renal bodies these symptoms are not present.

#### *Pathological Report.*

At the post-mortem examination, which was held on the day after death, the body was found to be extremely emaciated. Both kidneys could be distinctly felt through the anterior abdominal wall when pressure was made from behind, and their outline could be distinctly made out. On opening the abdomen the mobility of the kidneys was ascertained to be due to the laxity of the peritoneum which covered them. This condition had been brought about by the complete absorption of the perinephric fat.

The stomach was slightly atrophied. There was no evidence of tumour in its wall or in any part of the intestinal tract. Behind the stomach, between it and the pancreas, was a chain of glands, five or six in number, rather larger than hazel nuts, very hard in consistence, and adhering by their capsules. The supra-renal bodies were enlarged on both sides to the size of walnuts: they were not adherent to the kidneys. In both cases the swelling was somewhat nodular. On section they were seen to be infiltrated with grayish-white new growth of very hard consistence. It was observed that in both cases the cortex was apparently uninvolved. It presented the appearance of a narrow, orange-brown line at the periphery of the gland. On the detection of the supra-renal lesion the skin and mucous membranes were carefully examined for evidence of abnormal pigmentation, but none was found. The other abdominal viscera were absolutely free from new growth.

On removing the thoracic viscera the heart was found to be of small size, but otherwise normal. Both lungs, however, were much involved. In the left lung, the lymphatic system, of the lower lobe more especially, showed an exquisite network of grayish-white moniliform lines. On the inner surface of the posterior half of the lower lobe, near the root, numerous flat grayish-white nodules, varying in size from the head of a pin to the diameter of a hemp seed, shone through the pleura. The larger nodules were evidently formed by confluence of the smaller. In the upper lobe the lymphatic injection was marked to a much less extent, but the anterior part of it was evidently partially consolidated, and somewhat larger grayish-white nodules projected through the pleura. On section this part of the lung exhibited a close aggregation of grayish-white nodules somewhat resembling those of catarrhal pneumonia. They were granular on the surface. The lymphatics of the interlobular septa and round some of the smaller bronchi, especially of the lower lobe, were injected with the grayish-white masses noted on the pleural surface. On section of the lower lobe, grayish-white nodules similar to those already described were seen much more sparsely scattered through the lung substance. In this lobe the general injection of the deep lymphatics of the interlobular septa was also well marked, as was also that of the peri-bronchial and peri-vascular lymphatics. The glands at the root were somewhat enlarged, and their periphery infiltrated with grayish-white substance. The right lung was much more involved than its fellow. The lymphatic injection was extremely marked in the lower lobe and on the inner surface below the root. Nodules about the size of peas projected through the pleura. On section the upper lobe showed scattered white nodes much as in the lower lobe of the opposite lung. In the anterior part of the lobe the infiltration was so great as almost to produce the appearance of gray hepatization. A thin milky juice could be scraped from the surface. On section of this part of the lung the interlobular septa were injected as already described. In the middle lobe was a similar condition resembling gray hepatization. On a close examination, however, this appearance was found to be due to coalescence of small nodules. The lower lobe in its upper third presented a somewhat similar appearance. In the rest of its extent the nodules were more scattered. The lymphatics surrounding the larger and middle-sized bronchi were infiltrated and somewhat thickened.

The microscopic examination of the supra-renal bodies showed a great development of large epithelial cells arranged somewhat irregularly in the meshes of a dense fibrous stroma. The cortex was apparently almost normal. The lymphatic system of the lung was injected with large cells like those of cubical epithelium. Here and there there was a tendency to the assumption of a tubular arrangement. In the white nodules above described the large cells had grown into and completely filled the alveoli of



many of the lobules. Examination of parts of the bronchi where the peri-bronchial lymphatics were much involved, showed that in many parts there had been an epithelial ingrowth from these lymphatics to the lymphatic system of the mucous membrane of the bronchi. In no part of the bronchi examined could any evidence be found that the neoplasm had commenced in the mucous membrane.

The history of the case as well as the pathological appearances seem to point to the supra-renals as the primary focus. The involvement of both supra-renal bodies by a primary carcinoma has been frequently observed previously. When carcinoma invades the lung primarily it almost invariably commences in one of the larger bronchi, and diffuses thence throughout the lymphatic system of the lung, causing great fibroid thickening of the pleura and inter-lobular septa. In this case the evidence seemed to point to the invasion being in the contrary direction towards the bronchi and air vesicles rather than from either of them outwards. The absence of the pigmentation of the skin was also interesting as corroborating the view that Addison's disease is related only to caseous degeneration of the supra-renal bodies. It is worthy of note that the cortical portion of these glands had escaped almost entirely from involvement.

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## VII.—TRAUMATIC CYST OF PANCREAS; RUPTURE AFTER HYPODERMIC PUNCTURE; LAPAROTOMY; RECOVERY.

Reported by R. W. CHEW, M.B.; with Remarks by CHARLES W. CATHCART, F.R.C.S.

(Patient shown to Medico-Chirurgical Society of Edinburgh, 5th February 1890.)

P. R., æt. 13 years, admitted 4th May 1889 to Ward XVI., Royal Infirmary, Edinburgh, suffering from contusion of abdomen.

*History of Injury.*—On 4th May, between 4 and 5 P.M., while patient was playing on a moving lorry carrying several cwt. of coal, the carter struck at him with his whip, and he jumped off, but fell, and the hind wheel of the lorry (which was moving rapidly at the time) passed over the upper part of his abdomen.

On admission he seemed somewhat stupified, but showed no other symptoms of collapse or shock.

*May 5th.*—Great pain over upper part of abdomen (superficially); breathing thoracic; difficulty in micturition; on left side of abdomen, just above iliac crest, slight ecchymosis; slight crepitation on right side of thorax about level of tenth rib. Temperature, 97°·6 to 99°·4; pulse, 130; respiration, 20.

*May 6th.*—Abdomen slightly swollen; pain, especially on moving, relieved by the application of a flannel binder; micturition

normal. "There is no contraction of the abdominal muscles, except over an area about 3 inches square in left lumbar region." Pulse rapid, 140; pleuritic crepitation over sixth and seventh left ribs; short cough.

*May 7th.*—Pain still present over left side of abdomen, chest, and neck; crepitation still; temperature,  $99^{\circ}.1$ .

*May 8th.*—Bowels moved *per se* for the first time.

*May 9th.*—Some pain still continues; rest normal.

*May 18th.*—Discharged cured. No swelling nor other abnormality noted.

*Re-admitted* 20th July 1889 complaining of swelling of, and pains about abdomen of a spasmodic character, coming on during fasting, and relieved by food. This is said to have existed for about three weeks. On admission, very pale, with flushed cheeks; left side of abdomen swollen, the swelling occupying left hypochondriac region, and extending from it into the left lumbar and umbilical regions; lowest portion an inch below and to right of umbilicus; size and position of tumour unaltered by changing position of patient. On palpation, margin of swelling well defined;

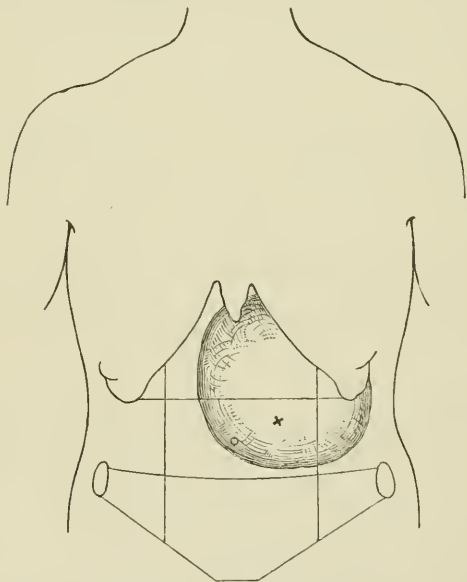


Diagram illustrating the position of the Pancreatic Cyst; x seat of puncture.

tumour feels firm and resisting; no pain on pressure. On percussion, dulness extends up into left hypochondriac region, and is apparently continuous with splenic dulness; stomach sounds masked, *i.e.*, that viscus is displaced. Measurement round body, over most prominent point of tumour ( $21\frac{1}{2}$  inches above umbilicus),

taken during deep expiration, was  $26\frac{1}{2}$  inches. Temperature normal. In view of a possible splenic enlargement, blood was examined, and showed a diminution of red corpuscles, with an apparent increase of white ones, and numerous microcytes. Heart sounds normal. Urine normal, both as regards quantity and reactions. Appetite apparently unaffected.

*July 22-30.*—Patient kept in bed, and on a milk diet. Girth varied from  $26\frac{1}{2}$  to  $26\frac{7}{8}$  inches. Pain during fasting much diminished. The tumour apparently not affecting general health any further. Diagnosed by several as a splenic tumour.

*July 31.*—About 1 P.M., Mr Cathcart, having recognised fluctuation, plunged a hypodermic needle into the tumour at its most prominent point (see Diagram) about 2 inches above and to the left of the umbilicus, and drew off about half a drachm of a transparent reddish fluid. This on examination was found to contain a few red corpuscles. Almost immediately after the needle was withdrawn the patient screamed and writhed with pain. This at first was localized at the point of puncture, but soon spread all over abdomen. In about half an hour there was flattening where tumour had existed, with slight bulging at flanks. On percussion, stomach-note now clear, whilst there was dulness on sides. The temperature rapidly fell from normal to  $97^{\circ}2$  or  $97^{\circ}$ . In about an hour vomiting of greenish matter came on, and a state of great collapse supervened. After consultation with Dr John Duncan, Mr Cathcart decided to open the abdomen at once, but it was not until 6 P.M., and after great difficulty, that consent of parents was obtained. Abdominal cavity was then opened into by an incision in linea alba, extending from a point  $2\frac{1}{2}$  inches below ensiform cartilage to a little below umbilicus, round margin of which it curved. About 40 oz. of dark-coloured (sanguineous) fluid escaped. Kidneys and spleen were found normal, and no peritoneal adhesions could be made out. By working between transverse colon and stomach, the lesser sac of peritoneum was entered, and a cyst discovered lying partially collapsed *behind* the stomach. This cyst was freely opened, when more clear brown fluid escaped. As the collapsed cyst could not be easily drawn into the abdominal wound, and as the original aperture in the cyst was not to be found, Mr Cathcart decided to drain it from behind the peritoneum. With this object, he explored the cyst's cavity with his finger, and found that below and behind the point of the twelfth rib of the left side the finger inside the cyst could be pressed directly out against the skin. At this point, therefore, a counter opening was made and a large drainage-tube was passed into the cyst from behind. The cyst and the general peritoneal cavity were then douched with warm boracic acid solution. After this the abdominal wound was closed with deep and superficial sutures, and corrosive wool dressing and a binder applied. At 8 P.M., temperature  $100^{\circ}2$ ; pulse, 154. The fluid removed soon clotted. The liquid part was of a

deep port-wine colour. It had a saline taste and a faintly alkaline reaction. It contained no urea, but had a large quantity of albumen, chlorides, and blood. The solid part had all the constituents of blood-clot.

*July 31.*—Patient kept under influence of morphia; careful stimulation; urine drawn off. Temperature,  $99^{\circ}8$  to  $100^{\circ}$ ; pulse, 100 to 140.

*August 1.*—Slight vomiting in morning; sips of warm water allowed; "Brand's essence" in small quantities by the mouth and nutrient enemata; dressed in evening, when there was only a slight discharge from wound; stimulation continued.

*August 2.*—Nausea present; temperature,  $99^{\circ}4$  to  $98^{\circ}4$ ; pulse, 100 to 120; dressings soaked with a serous and alkaline discharge; passing water without the catheter; wound on each side dressed again at night.

*August 3.*—Bowels moved slightly; discharge from wound more pronouncedly alkaline, as shown on the boracic lint.

*August 4.*—Both wounds dressed; a little arrowroot allowed.

*August 5.*—Tube shortened; complaining of pain at both wounds for a time (caused by the irritation of some faulty biniodide of mercury lotion); considerable flatus passed by the mouth; arrowroot replaced by boiled bread and milk, as the former did not seem to agree with patient.

*August 6.*—Tube changed for a smaller-sized one; food per mouth increased, and a corresponding increase of discharge.

*August 7.*—Both sheet and shirt soaked with watery discharge; skin around wound not reddened; some of discharge squeezed out from dressings, and examined. Reaction faintly alkaline; contains large amount of serum, albumen, and chlorides; no sugar; does not affect egg albumen; converts starch into glucose.

*August 14.*—Tube shortened; discharge less; patient was removed to large ward yesterday.

*August 18.*—Discharge more profuse, patient having to be dressed twice daily; diet no longer restricted.

*August 19.*—Rise in temperature; headache, and indefinite pains about abdomen; castor oil administered; patient sick; vomit, bile stained; stools greenish, with fragments of undigested food.

*August 20.*—Hardly any discharge; what there is not nearly so alkaline as formerly. Liq. pancreaticus, 3ss. t. d. s.

*August 22, 2 A.M.*—Dressings soaked; redressed; a number of papules over and around crest of ilium, apparently caused by irritation of discharge; zinc ointment applied.

*August 24.*—Slight stain of blood in discharge, tube being shoved out; a shorter tube inserted; the eruption not nearly so troublesome.

*August 29.*—Very little discharge; tube taken out.

*September 9.*—Wound in side nearly healed; patient allowed up for a while.



*September 19.*—No symptoms of any kind ; sent to Convalescent Home.

REMARKS.—There are several points of considerable interest in this case, which I propose to discuss under the heads of Nature of the Cyst, Effects of the Hypodermic puncture, Mode of Draining the Cyst, and Pathology of the Condition.

*Nature of the Cyst.*—When I came on duty on 31st July, fluctuation in the abdominal swelling was distinct. An ordinary blood cyst seemed excluded, for no manifest swelling had existed when the boy had left the Hospital fourteen days after the injury. I suspected either a chronic subperitoneal abscess or a traumatic hydro-nephrosis, such as is sometimes seen<sup>1</sup> after an injury to the loins. The idea of pancreatic cyst did not occur to me. Had I read the accounts of these cysts published by Senn and others as carefully before the operation as I have done since, and had I resorted to the method of inflating the colon and stomach, I ought at least to have strongly suspected the swelling to be pancreatic. The unexpected and disastrous effect, however, of the diagnostic puncture took me at a disadvantage, and made an immediate operation imperative. The clear, blood-stained character of the fluid drawn off by the hypodermic needle, and especially the irritating effect of the fluid upon the peritoneum when the cyst wall ruptured, made me think still more of hydro-nephrosis. This view was only dispelled when I had recognised by my fingers in the abdominal cavity that both kidneys, and, in fact, all the organs below the transverse meso-colon, were apparently healthy. The cyst was greatly collapsed, and I searched for it behind the stomach when I saw that it could be nowhere else.

I believe the cyst to have been pancreatic in its origin, for the following reasons :—

(1.) Pancreatic cysts in most respects similar to the present one have been described as following a severe injury to the hypogastric region, such as this boy received. Thus Senn's case followed a contusion by a fall on to the left side of the abdomen, a heavy keg at the same time striking the patient's back. Kulenkampff's case<sup>2</sup> followed blows about the umbilicus, which were directed upwards ; and Treiberg's case<sup>3</sup> was traced to injuries inflicted upon a young man by roughs.

(2.) Because the position of the cyst corresponded to that of the pancreas.

(3.) Because the reactions of the fluid, especially in its changing starch into glucose, as tested by Dr Chew, corresponded to those of previously described pancreatic cysts. In no case has any action

<sup>1</sup> "Die traumatischen Verletzungen der parenchymatösen Unterleibsorgane Edler," *Arch. für Klin. Chir.*, Band xxxiv. p. 754.

<sup>2</sup> *Berlin. Klin. Wochen.*, 12th February 1882.

<sup>3</sup> See abstract in *Annals of Surgery*, November 1888.



on albumen by the fluid from these cysts been found, although looked for.<sup>1</sup>

(4.) Because the persistence of the watery discharge, its variability, and its observed temporary increase, with improvement of the patient's diet, accord with the view of a cyst communicating with the pancreas.

On the other hand, the maceration and irritation of the skin by the discharge usually observed in pancreatic cysts was practically absent in this case. Possibly, however, the dressing used may explain this peculiarity. Next the skin, and beneath the dry corrosive wool, I always laid a large piece of boracic lint wrung out of boracic or corrosive sublimate lotion. The red litmus colouring of the lint was always changed to blue at the next dressing, but some neutralization of the alkaline fluid must have occurred which may have so far protected the skin. From the "macerated" appearance of the skin in previously described cases, from the presence in the discharge of excess of alkali, and from the practical absence of trypsin, the irritating effect on the skin would seem to be due to alkalinity rather than to any supposed digestive power of the cyst secretion. This is all the more probable because a similar effect has often been observed near biliary and intestinal fistulæ, which also discharge an alkaline, but not a peptonizing fluid. To diminish this irritating effect in such cases acid dressings might be used, besides the protection of the skin by the application of ointments as above previously employed.

In many of the published cases of pancreatic cyst great epigastric pain was observed. In this case the pain was not very great, and was relieved by food.

*Effects of the Hypodermic Puncture.*—It is certain that the hypodermic puncture caused the cyst wall to rupture and to discharge its contents into the peritoneal cavity. It is also certain that acute peritonitis, thereby set up, would, in all probability, shortly have killed the patient had the operation not been done. We often hear of the risk of starting sepsis by a diagnostic puncture with a dirty needle, and of the danger of aspiration with a large one through the peritoneal cavity, but seldom of the risk of rupture of the cyst wall by a fine needle. In many of the recorded cases a hypodermic puncture was performed, and in only one did peritonitic symptoms appear.<sup>2</sup> These lasted for eight days. The majority of those who have written on pancreatic cysts distinctly recommend hypodermic puncture. Thus Senn writes,—“An exploratory puncture with a fine and perfectly aseptic needle

<sup>1</sup> Senn (*Amer. Journal of Med. Sciences*, 1885), in his report of Gussenbauer's case (*Arch. f. Klin. Chir.*, Band xxix.), says that the fluid "digested albumen" (p. 26); but, on consulting the original, I find that it did not,—“Amylum in Zucker verwandelt und demnach nichts Anderes als Pancreassecret war” (p. 360).

<sup>2</sup> Kocher's case (*Correspondenz-Blatt fuer Schweitzer-Aerzte*, 1st May 1888), reported in the *Annals of Surgery*, November 1888.

of a hypodermic syringe will not only add material diagnostic information by revealing the character of the cyst contents, but the procedure will also settle the question as to the existence or absence of adhesion between the cyst walls and the parietal peritoneum."<sup>1</sup>

My case, however, proves clearly that the procedure involves a considerable risk where the cyst wall is thin. This it seems often to be in pancreatic cysts, and would be specially so where they are large, of recent growth, and traumatic in origin. In such cases, and possibly also in others, one would only be justified in puncturing through the peritoneal cavity if everything were ready for an immediate laparotomy should rupture take place.

In this connexion I may quote from Knowsley Thornton's *Lectures on the Surgery of the Kidneys*,—"The second warning I would emphasize is, never to tap a suspected renal tumour through the anterior abdominal parietes, *i.e.*, through the peritoneum. From this rash proceeding I have also seen immediately fatal results."<sup>2</sup>

The severe peritonitis produced by the escape of the pancreatic cyst contents into the peritoneal cavity proves what has only been suspected before<sup>3</sup>—that rupture of such cysts is a distinct source of danger. This seems to be the first case on record where such has occurred. In Senn's experiments<sup>4</sup> pancreatic fluid escaping from internal fistulæ into the peritoneal cavity was so rapidly absorbed as to cause no trouble at all. But when a large quantity of fluid, even although far from being pure pancreatic juice, is suddenly thrown upon the peritoneum, the result is evidently very different, as might have been expected.

*Mode of Draining the Cyst.*—In all the recorded cases the cyst has been successfully drained by stitching its wall to the anterior abdominal wound. I feared to do that in this case, because I had to make a hole into the cyst in addition to that caused by the needle puncture, which I could not find, also because the cyst wall was greatly collapsed. The boy was very weak, and could not safely have been kept long on the table. Hence I was driven to finish the operation as rapidly as was consistent with safety. Had I trusted to anterior drainage the second hole in the cyst wall might have allowed the cyst contents to leak into the peritoneum. A posterior drain while the patient was on his back was, however, calculated to keep the cyst cavity always empty. The result was perfectly satisfactory, although neither of the two anterior cyst apertures were artificially closed.

In similar cases, in future, an attempt to reach the tumour by

<sup>1</sup> *Op. cit.*, p. 40.

<sup>2</sup> *Illustrated Journal*, 30th November 1889, p. 205.

<sup>3</sup> Senn, *op. cit.*, p. 44.

<sup>4</sup> *American Journal of Medical Sciences*, 1886, p. 151.

diagnostic puncture might be made from below the posterior half of the twelfth left rib, and, if successful, the surgeon might dissect carefully, and reach the cyst from the same starting-point. At least in the case of large cysts which push a way for themselves this should be quite easy. The gain in not opening the peritoneal cavity and in not cutting into the abdominal wall is sufficiently obvious.

As to the pathology of these traumatic pancreatic cysts, Senn, in his first paper, thought that the injury caused a rupture of the duct, and that when this was afterwards closed by cicatrization a distension cyst resulted. He has since experimentally shown that complete blockage of pancreatic ducts causes atrophy of the gland behind, and only a slight distension of the ducts. He now believes the etiological factor to be "an arrest of absorption of the pancreatic juice."<sup>1</sup>

Some such process as the following might explain the condition. The injury causes a laceration of the gland. This is followed by extravasation of blood, and with this is mixed the pancreatic secretion from the torn ducts. Not only is a constantly increasing fluid thus added to the original hæmatoma, but the collection of fluid probably becomes irritating in character. It will thus tend to excite the formation of a capsule round it, and by chemical irritation and tension would gradually increase in size.

This would explain the occasional onset of these cysts shortly after the injury, *i.e.*, before cicatrization could have produced its effects (swelling *observed* two weeks after injury in Senn's own case). In cases, also, where they have been several weeks of appearing, it is easy to understand their possible presence from the first. Small cysts near the pancreas would not be detected, and if they were slow of growing it might be several weeks before they attracted attention.

This view of the causation of traumatic pancreatic cysts would equally apply to similar renal cysts. Hitherto such have been explained by a partial blockage of the ureter, against which it may be urged that frequent aspiration or drainage often leads to their cure, which would be less likely to occur if the whole kidney were involved than only a damaged part of it.

The case I have narrated is the fourth that has been recorded as resulting from injury to the pancreas (*v.* Cases 3, 7, and 14 of Table appended).

Cysts developing after fits of indigestion, or without any apparent cause, are more numerous. Altogether I can find references to twelve such cases. I do not specially refer to them, however, because the above remarks are only intended to be a commentary to this particular case.

<sup>1</sup> *American Journal of Medical Sciences*, 1886, p. 207.

## CASES OF PANCREATIC CYST TREATED BY OPERATION.

| No. | OPERATING SURGEON. | CAUSE OR FIRST SYMPTOM.                                                                                            | TREATMENT.                                        | RESULT.                                                      | REFERENCE.                                                               |
|-----|--------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------|
| 1   | Bozemann.          | Occasional attacks of indigestion.                                                                                 | Cyst dissected out.                               | Cure.                                                        | <i>Med. Record</i> , Jan. 14, 1872.                                      |
| 2   | Rokitansky.        | None known.                                                                                                        | Attempted incision of cyst; injury to intestines. | Death from peritonitis on the tenth day.                     | <i>Wiener Med. Pr.</i> , Nov. 15, 1881.                                  |
| 3   | Kulen-<br>kampff.  | Upward blows about umbilicus.                                                                                      | Laparotomy and drainage of cyst.                  | Cure.                                                        | <i>Berlin. Klin. Wochen.</i> , Feb. 1882.                                |
| 4   | Gussenbauer.       | Gastric derangement.                                                                                               | Laparotomy and drainage of cyst.                  | Cure with fistula.                                           | <i>Arch. f. Klin. Chir.</i> , vol. xxix., 1883.                          |
| 5   | Dixon.             | Gall-stones.                                                                                                       | Punctured.                                        | Death in 84 days from pressure on bile and pancreatic ducts. | <i>Med. Record</i> , March 1884.                                         |
| 6   | Lücke.             | Malignant disease.                                                                                                 | Laparotomy—closure of wound.                      | Death from peritonitis.                                      | <i>Virchow's Archiv</i> , vol. xli.                                      |
| 7   | Senn.              | Bruise of left side of abdomen.                                                                                    | Laparotomy—drainage of cyst.                      | Cure.                                                        | <i>Amer. Journal of Med. Science</i> , July 1885.                        |
| 8   | Hahn.              | Vomiting and pain.                                                                                                 | Laparotomy—drainage of cyst.                      | Cure.                                                        | <i>Centralblatt für Chir.</i> , 1885, No. 2.                             |
| 9   | Riedel.            | Gradual onset of swelling.                                                                                         | Laparotomy—cyst tapped.                           | Death from peritonitis in 96 hours.                          | <i>Archiv für Klin. Chir.</i> , vol. xxxii.                              |
| 10  | Bilroth.           | Convalescence from typhoid.                                                                                        | Laparotomy—attempted excision of sac.             | Death from peritonitis.                                      | <i>Zeitschrift für Heilkunde</i> , 1886.                                 |
| 11  | Ahlfeld.           | Gradual onset of swelling.                                                                                         | Laparotomy—attempted excision.                    | Septicæmia—death in 7 days.                                  | "Inaugural Dissertation," Marburg, 1886.                                 |
| 12  | Küster.            | Heavy fall on back from a carriage; eight years afterwards, sudden abdominal pain; collapse, followed by swelling. | Laparotomy—packing with iodiform gauze, drainage. | Recovery.                                                    | <i>Deut. Med. Wochen.</i> , 1887.                                        |
| 13  | Kocher.            | Sudden abdominal pains.                                                                                            | Laparotomy—incision and drainage.                 | Recovery.                                                    | <i>Correspond. Blatte für Schweizerärzte</i> , May 1888.                 |
| 14  | Treiberg.          | Injury after assault.                                                                                              | Laparotomy—incision, drainage.                    | Recovery.                                                    | "Karkov Inaug. Dissert.," 1888 ( <i>v. Annals of Surg.</i> , Nov. 1888.) |
| 15  | Wölfler.           | Gastric irritation from swallowing a liniment.                                                                     | Laparotomy—packing, drainage.                     | Recovery.                                                    | <i>Zeitschrift für Heilk.</i> , vol. ix., 1888.                          |
| 16  | Annandale.         | Gradual onset of epigastric swelling.                                                                              | Laparotomy—incision, drainage.                    | Recovery.                                                    | <i>Brit. Med. Journal</i> , vol. i., 1889.                               |

## VIII.—REPORT OF THE ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL, FOR THE QUARTER ENDING 31ST JULY 1889.

By ALEXANDER KEILLER (Junior), L.R.C.P. & S.E., and W. G. AITCHISON ROBERTSON, M.B., C.M., B.Sc.

(Read before the *Edinburgh Obstetrical Society*, 12th March 1890.)

## INTERN CASES.

FROM 1st May to 31st July 1889 there were 65 women admitted to, and delivered in, the Hospital. This number includes 33 primiparæ and 32 multiparæ.



*Primiparæ, 33.*

*Age*.—Minimum, 18; maximum, 34; average, 23·3.

*Presentation*.—Vertex, 30; pelvic, 2; face, 1.

*Position*.—Left occipito-anterior, 23; right occipito-posterior, 5; right occipito-anterior, 2; left mento-anterior, 1; left sacro-anterior, 1; right sacro-posterior, 1.

*Duration of Labour*.—First stage: Minimum, 4 h. 30 m.; maximum, 62 h.; average, 15 h. 5 m. Second stage: Minimum, 25 m.; maximum, 6 h.; average, 2 h. 32 m. Third stage: Minimum, 5 m.; maximum, 45 m.; average, 22·5 m. Whole labour: Minimum, 5 h. 25 m.; maximum, 66 h. 30 m.; average, 18 h. 17 m.

*Classification of Labours*.—Natural, 19; laborious, 11; complex, 1; preternatural, 2.

*Infants of Primiparæ*.—Male, 18; female, 15. Length of child: Minimum, 16 inches; maximum, 20 inches; average, 19 inches. Weight of child: Minimum, 4 lbs. 2 oz.; maximum, 8 lbs. 12 oz.; average, 7 lbs. 4 oz. Weight of placenta: Minimum, 14 oz.; maximum, 2 lbs. 2 oz.; average, 1 lb. 5·8 oz. Length of cord: Minimum, 13 inches; maximum, 33 inches; average, 23·4 inches.

*Male Children of Primiparæ, 18*.—Length of child: Minimum, 17 inches; maximum, 20 inches; average, 19·3 inches. Weight of child: Minimum, 5 lbs. 4 oz.; maximum, 8 lbs. 11 oz.; average, 7 lbs. 5 oz. Weight of placenta: Minimum, 14 oz.; maximum, 2 lbs. 2 oz.; average, 1 lb. 7 oz. Length of cord: Minimum, 19 inches; maximum, 33 inches; average, 24·9 inches.

*Female Children of Primiparæ, 15*.—Length of child: Minimum, 16 inches; maximum, 20 inches; average, 18·6 inches. Weight of child: Minimum, 4 lbs. 2 oz.; maximum, 8 lbs. 12 oz.; average, 7 lbs. 2·5 oz. Weight of placenta: Minimum, 1 lb.; maximum, 1 lb. 12 oz.; average, 1 lb. 2·6 oz. Length of cord: Minimum, 13 inches; maximum, 33 inches; average, 21·8 inches.

*Multiparæ, 32.*

This number is made up of 22 who were ii.-paræ; 3 were iii.-paræ; 2 were v.-paræ; 2 were vi.-paræ; 1 was a vii.-para; 1 an viii.-para; and 1 a xii.-para.

*Age*.—Minimum, 20; maximum, 35; average, 26·8 years.

*Presentation*.—Vertex, 30; breech, 1.

*Position*.—Left occipito-anterior, 27; right occipito-posterior, 1; right occipito-anterior, 2; left sacro-anterior, 1.

*Duration of Labour*.—First stage: Minimum, 1 h. 45 m.; maximum, 10 h.; average, 6 h. 39 m. Second stage: Minimum, 5 m.; maximum, 11 h.; average, 1 h. 26 m. Third stage: Minimum, 0; maximum, 50 m.; average, 21·7 m. Whole labour: Minimum, 2 h. 10 m.; maximum, 15 h. 30 m.; average, 8 h. 26 m.

*Classification of Labours*.—Natural, 26; laborious, 3; complex, 2; preternatural, 1.



*Infants, 31.*—16 males, 15 females. Length of child: Minimum, 17 inches; maximum, 21 inches; average, 19·18 inches. Weight of child: Minimum, 5 lbs. 6 oz.; maximum, 9 lbs. 10 oz.; average, 7 lbs. 6 oz. Weight of placenta: Minimum, 10 oz.; maximum, 2 lbs. 8 oz.; average, 1 lb. 7 oz. Length of cord: Minimum, 15 inches; maximum, 36 inches; average, 23 inches.

*Male Children of Multiparæ, 16.*—Length of children: Minimum, 17 inches; maximum, 21 inches; average, 19·1 inches. Weight of children: Minimum, 5 lbs. 6 oz.; maximum, 8 lbs. 12 oz.; average, 7 lbs. 5 oz. Weight of placenta: Minimum, 1 lb. 2 oz.; maximum, 1 lb. 15 oz.; average, 1 lb. 6·9 oz. Length of cord: Minimum, 17 inches; maximum, 32 inches; average, 22·7 inches.

*Female Children of Multiparæ, 15.*—Length of children: Minimum, 18 inches; maximum, 21 inches; average, 19·2 inches. Weight of children: Minimum, 4 lbs. 8 oz.; maximum, 9 lbs. 10 oz.; average, 7 lbs. 7 oz. Weight of placenta: Minimum, 10 oz.; maximum, 2 lbs. 8 oz.; average, 1 lb. 7·2 oz. Length of cord: Minimum, 15 inches; maximum, 36 inches; average, 23·4 inches.

From the preceding figures we may make some interesting and curious deductions:—

1. That the relative number of malpositions is greater in primiparæ than in multiparæ.

2. As regards the duration of labour.

(1.) The average duration of the first stage in multiparæ is much less than one-half what it is in primiparæ, being 15 h. 5 m. in the latter, and 6 h. 39 m. in the former.

(2.) The length of the second stage in primiparæ is nearly twice as long as it is in multiparæ, lasting, on an average, 2 h. 32 m. in the former, and 1 h. 26 m. in the latter.

(3.) The average duration of the third stage is nearly alike in the two classes of patients. This is due to the fact that this stage was always artificially terminated if the placenta were not spontaneously expelled within 25 or 30 minutes.

(4.) The average duration of the whole labour is, in primiparæ, 18 h. 17 m.; while in multiparæ it is less than one-half, or 8 h. 26 m.

3. The number of labours which were either laborious or required instrumental aid is much greater in primiparæ than in multiparæ, as was to be expected.

4. (1.) The number of male births is greater amongst primiparæ than amongst multiparæ.

(2.) The length of the child (the average is taken from both male and female children combined) born by the multiparæ is greater than the length of the child born by the primiparæ.

(3.) The same holds good as regards the weight of the children.

(4.) The placenta in multiparæ is also heavier than in primiparæ.

(5.) But the umbilical cord is slightly longer in primiparæ than in multiparæ.

Now, comparing the male and female children of primiparæ together, we find—

(6.) That the average male child of a primipara preponderates over the average female child of the same in every particular. It is heavier, longer, has a much larger placenta, and a much longer umbilical cord.

(7.) While if we compare the male and female children of multiparæ together, we find that the reverse holds. The average female child of the multipara is heavier and longer than the average male child of the same, and possesses a heavier placenta and longer cord.

If now we look at the male children of primiparæ and multiparæ together, we find that—

(8.) Their average weights are similar ; the male of the primipara is slightly longer than that of the multipara ; the placentæ are nearly alike as regards weight, but the umbilical cord of the primipara is more than two inches longer than that of the multipara.

Now, lastly, if we compare the female children of primiparæ and multiparæ together, we find that the advantages to the child are all on the side of the multipara.

(9.) The female child of the multipara is much heavier and longer, is attached to a much heavier placenta by a much longer cord than is the child of the primipara.

*Children.*—There was no case of deformity. In one child the posterior part of the first visceral cleft separating the first and second post-oral arches was ununited at birth. It was merely a small opening behind and at the lower part of the pinna of the right ear, and a probe could be passed in for a short distance. There was a red scar leading down from it towards the neck in the position of the cleft. The child was otherwise fully developed, and in a few days the opening became completely closed up.

*Placentæ.*—Two were battledore in shape, and other two were remarkable for the large size of the blood-clot which came away with them. One clot, weighing  $11\frac{1}{2}$  oz., was embedded in the substance of one placenta, and in the bag of membranes of another was a clot weighing 1 lb. 5 oz. In two cases the placenta and membranes were expelled along with the child.

*Membranes.*—Two children were born with *cauls*. One of these was interesting medico-legally. In this case the caul extended right over the face and encircled the neck. On the child making an inspiratory effort the membrane covering the mouth was drawn in, and showed well how easily the child might have been suffocated had the caul not been removed at once. In two cases the membranes remained unruptured, and protruded through the ostium vaginæ as a bag. In one case in which the placenta and mem-

branes were expelled along with the child, the membranes were very tough, and had only a very small tear, through which the child had escaped.

*Cords.*—In four cases the cord was round the child's neck, and in one of these cases it was also tightly drawn round the chest of the child under its arms. In one case of very precipitate birth, where the child was expelled while the patient was standing, the cord was torn through, and, contrary to what is usually stated, there was pretty severe hæmorrhage from the foetal end of the ruptured cord, and it required to be ligatured to stop the flow.

*Classification of Labours.*—Natural, 44; laborious and instrumental, 14; preternatural, 3; complex, 3.

*Natural Labours.*—Seven were cases of precipitate birth. One of these was typical. The patient was in her fifth pregnancy, and at full time. She had taken castor-oil the preceding evening, and after this had felt slight pains, as she thought, due to the medicine. She had had an evacuation of the bowels, and, while standing, three violent expulsive pains came on, and the child was expelled on to the floor, the cord snapping at the same time. The patient was a strong, powerful woman. In another the second stage was very short, owing to the fact that there was no perineum, as it had been ruptured almost to the anus in a preceding labour. In another precipitate case the patient, a vi.-para, felt no pains till the membranes ruptured, and then a few strong pains expelled the child.

*Laborious Labours* numbered 14. Forceps were required in 2 cases for threatened inertia uteri; in 9 for prolonged second stage, with no advancement of head; in 2 cases of persistent occipito-posterior position; and in 1 right occipito-posterior case. Two cases were very prolonged, due to the excessive amount of liquor amnii present. In one of these cases the membranes had to be ruptured before the head would engage at the brim.

*Preternatural Labours.*—These were pelvic presentations, one being right sacro-posterior and the other left sacro-anterior in position.

*Complex Labours.*—These were two cases of placenta prævia, one at the seventh and the other at the eighth month.

*Premature Births.*—One child was born at the eighth month, strong and healthy, though small. Another at the same age lived about three weeks, while one at  $7\frac{1}{2}$  months lived two days.

*Ophthalmia Neonatorum* occurred only in two cases, and in these at quite different times. Both were rapidly cured by the use of a strong solution of nitrate of silver (20 grains to ℥j.) No prophylactic was used except thorough washing of the eyes with water immediately after birth.

*Puerperium.*—There were two cases in which a widely-diffused scarlatiniform rash appeared. It was much brighter in the one case than in the other, and appeared on the second day after

delivery. At first it consisted of small red points, in which the papillæ were enlarged, and, on the body, resembled the rash of scarlatina closely; though on the face it was rather blotchy and purplish, more resembling measles. The spots grew in size and gradually coalesced. It extended over the chest, abdomen (most marked under the binder), forehead, face, and on the flexor aspects of the arms and legs. It had disappeared on the fourth day after its onset. The temperature never rose above 99° F. There was only a slight itchiness in the skin for one day. In the second case the rash was never so brilliant. It came out on the third day post-partum, and, though it extended all over the body, it was most marked on the face, round the nipples, and under the binder. It lasted two days, and then faded. The temperature was normal throughout. There was a rise of temperature only once, and this was in one of the cases of placenta prævia, when one evening it rose to 101° F. After giving one intra-uterine douche of corrosive sublimate solution (1 in 5000) it fell and did not again rise. The breasts of one child began to swell six days after its birth. On the seventh day they were both tender and inflamed, and a milky fluid could be squeezed out of both. In spite of treatment an abscess formed in the right breast and required incision, while the inflammation in the left breast resolved.

*Mortality.*—1. There were no maternal deaths.

2. *Fœtal.*—In both of the cases of placenta præviæ the child was dead-born. In another case the fœtus was partially decomposed when born, and the skin was peeling off in parts. The mother had felt no fœtal movements for some days prior to the birth.

3. *Infantile.*—The premature 7½ months' child lived two days, while the 8 months' child lived three weeks. One still-born child, delivered by forceps, was resuscitated, and lived ten hours.

The following cases are worthy of greater detail:—

#### I. *Case of Placenta Prævia.*

Mrs P., age 33, fifth pregnancy, and then at the eighth month. Her previous labours were normal, and she had had no miscarriages. The history was, that she had been last unwell at the beginning of December 1888, but that in March of this year she had a red discharge (probably due to slight placenta separation). She felt fœtal movements for the first time early in April. At an early hour in the morning of 13th July she was suddenly attacked by a severe flooding, and this continued more or less severely till 11 A.M. At this time she was found sitting up in bed and bleeding rather profusely. On examination the os uteri easily admitted one finger, and the cervix was soft and dilatable. Posteriorly a tough fibrous structure (placenta) could be felt along with much blood-clot, which broke down under the finger. The bleeding was slightly more profuse with each pain, but the latter were few and



slight in character. Four carbolised plugs were introduced, and patient was taken to the hospital at once.

On admission she was seen by Dr Keiller (senior), who felt the head presenting and re-introduced the plugs. At 3 P.M., as there was, in spite of the plugging, still a good deal of oozing, the wool was removed with many clots, and now the os uteri admitted two fingers. The plugs were again introduced, but more firmly. Careful abdominal auscultation failed to discover the presence of the foetal heart. At 8.30 P.M. the bleeding was again profuse, and on removing the plugs the os uteri was found to admit three fingers. There was a great mass of clotted blood at the upper part of the vagina and in the cervix. The lower part of the placenta could now be easily felt posteriorly and detached from the lower uterine segment. A very hot douche was given to wash out the clots, but on examining a few minutes after, the vagina was found to be again filled with large clots and fluid blood. The case was now urgent, as the patient was becoming exhausted; so, having anaesthetized her, the hand was introduced into the vagina and all the clots scooped out—quite a basin full. The lower half or three-quarters of the placenta was now easily felt detached, and situated on the posterior and lower part of the uterus. Gradually insinuating the fingers through the os uteri, the hand was introduced into the uterus, and, having ruptured the membranes, nearly the whole of the placenta was found to be detached, only the upper part remained adherent to the uterine wall. The head of the child was now presenting along with the separated part of the placenta; and as the child was dead, we thought it better to remove the placenta first, which we did after separating the part which remained attached to the uterus. The head now presented along with the right arm; but, in order to expedite the labour, version was performed and the right leg brought down. Suprapubic pressure was applied and the child at once expelled. No more bleeding took place, but the patient was very exhausted, and the uterus did not contract very well till some very hot douches had been given, and ergotin hypodermically. Ether was injected, and brandy given by the mouth as soon as the patient became conscious. She made a perfectly satisfactory recovery, the temperature only once, on the evening of the 17th, going up to 101° F., but at once falling after an intra-uterine douche of corrosive sublimate solution (1 in 5000) had been given. The patient left on July 24th quite well.

This was a good example of placenta prævia, in which the placenta was implanted low down posteriorly, and almost entirely on the expanding zone of the uterus. There was no pulsation in the cord even when the placenta had just been extracted, and on the birth of the child the foetal heart could not be heard. It was a premature female child of 7½ months, weighing 4 lbs. 8 oz., and appeared to have been dead for several hours previous to its birth.



## II. *Another Case of Placenta Prævia.*

A. M. L., aged 24; second pregnancy. Patient was admitted to Hospital on the morning of June 23rd, with severe hæmorrhage. Her last catamenial discharge was in the beginning of October, and she first felt stirrage at the middle of March. Previous to admission she had had three floodings, viz., on the 2nd, 12th, and 19th of June. These came on suddenly and causelessly, and the two latter were very severe, and rendered her very anæmic and weak. On admission at 8.30 A.M., the os uteri allowed two fingers to enter, and as the bleeding was severe, the vagina was plugged and 10 grains of quinine were given. Uterine contractions soon came on, and at 12 o'clock noon one of the plugs was expelled. The remaining plugs were then removed along with some clots. The os uteri was now fully dilated, and on passing the fingers anteriorly a fibrous structure was met with. This was the lower edge of the placenta. The bag of membranes protruding through the os was finger-of-glove in shape. The presentation was pelvic and in the first position. Chloroform having been given, the membranes were ruptured, and the left knee and foot brought down, and then the labour ended naturally. No pulsation could be felt in the cord, and the foetal heart never beat after birth. Covering the lower half of the maternal surface of the placenta were many adherent blood-clots, showing where the early separation had taken place. The membranes were entire excepting the rent through which the child had escaped, and this rent was just at the margin of the placenta, thus proving the low placental insertion. The placental seat here was not so low down as in the preceding case.

## III. *Face Case.*

Mrs H., aged 27, primipara; delivered 6th May. At 5 P.M., the position was right occipito-posterior. Gradually the head became more and more extended, and consequently more of the face became palpable, till it became a left mento-anterior face case. The descent now became very slow though the pains were strong and frequent. The presenting face was greatly swollen, and a large caput was felt on the forehead. The finger could be introduced into the mouth and the gums felt. On reaching the perineum the chin rotated under the pubic arch, and the face presented directly in the vaginal opening. The perineum was very tight, but at last the head was born at 8.20 P.M., and the body followed immediately. The lips of the child were greatly swollen and everted, and on the left malar region there was a large caput succedaneum, and on the middle of the forehead another. The swelling of the face had nearly gone by the next day, and by the 10th the discoloration had also disappeared.

#### IV. *Hydatiginous Degeneration of the Chorionic Villi.*

Mrs B., aged 43, has had seven previous pregnancies. This patient was sent to the Hospital on the 8th June from the Royal Infirmary, to which she had been admitted three days previously on account of swelling of the legs and enlargement of the abdomen. The swelling of the legs had gone, but the abdominal tumour still remained. Uterine contractions came on at 7 A.M. on the 8th, and at 11 A.M. she was brought to the Maternity Hospital.

She did not think that she was pregnant, and had felt no foetal movements. She had a red discharge which had continued for a month. The patient was a small woman, very emaciated and old-looking. Her skin was of a dark brownish-yellow colour, but the conjunctivæ were not coloured. On examination at 12.15 P.M., the fundus uteri was found to be on a level with the umbilicus, and the contractions were strong. The uterus felt hard during the pains, but soft and doughy in the intermissions. No foetal heart could be heard. Per vaginam the os uteri admitted one finger easily, and was blocked up by a soft, toughish, round mass, attached to the middle of which was a free irregular body. As the hæmorrhage was severe, plugs were inserted and stimulants given. At 2.30 P.M., Dr Keiller (senior) removed the plugs. The os uteri was then fairly well dilated. Patient was anæsthetized, and the hydatiginous mass removed by the fingers. It weighed about 3 lbs., and at one part was the partially absorbed placenta, and this was the part which had first presented.

#### V. *Case of Long-suspended Animation.*

N. P., aged 18, primipara. This was a persistent occipito-posterior vertex case. At 10.15 A.M., 1st June, the os uteri was almost fully dilated, and the pains continued regularly the whole day. At 7 P.M. the condition was the same, so chloroform having been given, the membranes were ruptured and high forceps applied. The descent of the head was much hindered by the anterior lip of the cervix and the anterior vaginal wall prolapsing. The former was pushed up above the sinciput during a uterine intermission, but the latter could not be so dealt with, as the forehead pressed too firmly on the pubis. The head was slowly and with difficulty drawn to the pelvic outlet, the conjugate of which was considerably diminished by the presence of the prolapsed vaginal wall; but after much delay the child was born at 8.40 P.M. The child when born showed no signs of life, pulsation in the cord having entirely ceased; but on auscultation the child's heart was heard to be beating. The cord was immediately tied and the child removed. Artificial respiration (Schultze's and Sylvester's methods) was commenced along with alternate immersions in baths of hot and cold water. These were continued in turn for an

hour and a half before the child took its first feeble voluntary inspiration. The only circumstance which induced us to persevere so long a time was the fact that the foetal heart still continued to beat. On three occasions  $\mathcal{M}$ v. sulphuric ether were injected into the umbilical vein. The voluntary inspirations were at first very feeble, and at once ceased when artificial respiration was interrupted, so this had to be kept up constantly. Alcohol was rubbed over its body, and small enemata of brandy were given, while ammonia and ether were held to its nose in the hope of stimulating the respiratory centre. After applying these various methods constantly for  $3\frac{1}{2}$  hours, the child commenced to make rhythmical voluntary inspirations. These, immediately after the cessation of artificial respiration, were strong, but gradually became weaker till they almost ceased, when the same means had again to be resorted to for a short time. At first the voluntary respirations were only 14 per minute. Direct inflation of the lungs by applying our mouths to that of the child's was then resorted to, and air was thus blown into the lungs. These combined methods improved the condition of the child, and the respirations now increased to 24 per minute. They were now purely voluntary and much deeper than at first. The child was now, respiration having been established, wrapped in cotton wool and blankets and put into a cot near the fire with hot-water bottles on each side of it. This was at 12.30 A.M. At 2.30 A.M., 2nd June, the respiration was still the same. At 5.15 A.M., the breathing became very feeble, rapid, and hardly audible, and on auscultation râles were heard all over the chest. The heart was beating very feebly,  $\mathcal{M}$ v. ether were injected. This seemed to revive the child for some time. Convulsive movements were present at this time, manifested by clonic spasms of the arms, legs, and chin. At 9 A.M. it was in much the same condition, and at 9.45 A.M. the convulsions became more severe and the child died.

This case is one which ought to afford us great encouragement in perseveringly using the various methods of resuscitating apparently dead-born children for a longer time than we are in the habit of doing. In this instance it was fully  $1\frac{1}{2}$  hours before the child made any voluntary inspirations, and even then, the treatment had to be kept up for two hours longer before it could be trusted to rely on its own voluntary efforts. It was unfortunate that in this case the child ultimately died (due, doubtless, to the excessive and long-continued pressure on its head), but still it lived sufficiently long to establish the truth of the assertion, that we ought to persevere for a longer time than we usually do with the artificial methods of respiration, and the various means of stimulating the respiratory centre.

*(To be continued.)*

## IX.—ON THE TREATMENT OF RUPTURE OF THE UTERUS.

By D. BERRY HART, M.D., F.R.C.P. Ed., F.R.S. Ed., President of the Edinburgh Obstetrical Society, etc.

(Read before the Obstetrical Society of Edinburgh, 14th May 1890.)

BANDL's great work on *Rupture of the Uterus* not only made the cause of the vast majority of cases of uterine rupture perfectly simple, but also the means for its prevention attainable and clear. Since his monograph in 1875 we have had more exact anatomical research and a fuller knowledge of the physiology of labour, but all these later advances have been insignificant as compared with the great stride of the Vienna obstetrician. Cases of uterine rupture have, however, not disappeared from practice, and we have still to settle what can best be done for the unfortunate woman who suffers from this appalling accident.

My personal experience of this disaster is based on five cases, all of whom have died. In the second case I met with I drained, but without success. In the third and fourth the patients became moribund shortly after the occurrence of the rupture; while in the fifth I did abdominal section and Prevôt's operation. Though this last case was also fatal, it presents points of interest; and as the experience of other operators has been better than my own, I have deemed it advisable to bring the subject before you to-night, so as to draw attention to the treatment of an accident too often regarded in this country as almost unavoidably fatal.

My fifth case is as follows:—

### *Report by Drs Fitzgerald and Melville.*

Mrs C., æt. 41 years, residing at 3 Burns Land, Greenside Row, x.-para. Her previous children were born living and healthy. The labours were all slow and lingering, except the ninth, in which the membranes broke unexpectedly at a meal, the child being born in an hour and a half. She menstruated last in the beginning of July, and had not been very strong during the last few months. She had influenza at the New Year, and shivered for two days; she had also a cough and a pain in her left side, which appears to have been due to pleurisy.

*Present Pregnancy.*—Membranes ruptured when she was sitting at her dinner at two o'clock. There were no previous pains. The student arrived at a quarter to three o'clock, and found the patient in bed. Her face was pale and emaciated. On palpation of abdomen, walls were tense and resistant. The uterus was felt firm and hard, but no contractions were made out. The position of the head could not be ascertained. On auscultation, the foetal heart sounds could not be heard. On vaginal examination the vagina was roomy and moist. The os uteri was not dilated, and



barely admitted the tip of the finger; no presenting part could be felt. She had had no pains up till now, except now and then very slight lingering pains at the front of the lower part of the abdomen. No pains whatever at the back. The student left at 3.20 P.M., with instructions to be sent for if the pains came on stronger. He returned at 6 P.M., and found the os had dilated considerably, and would now admit of three fingers. A smooth fleshy mass could be felt presenting, but could not be accurately diagnosed. Foetal heart sounds could not be made out. The pains were still of the same lingering character, and all at front of abdomen. They were a little stronger than previously, but still slight in nature. She was ordered a hot douche at 6.30 P.M., and another at 7.15 P.M. At 7.40 P.M. the presentation was diagnosed to be a shoulder, and assistance was sent for to the Maternity Hospital.

The house-surgeon arrived at 8.30 P.M. The uterus was found in a state of tonic contraction. No foetal heart sounds could be made out. Chloroform was administered, and on vaginal examination the presentation was found to be the right shoulder. The child lay in the dorso-anterior, left cephalo-iliac position. The question of turning was now discussed, and it was decided not to do so on account of the tonic contraction of the uterus and the firm impaction of the shoulder, and Dr Hart was sent for. During the interval before the arrival of Dr Berry Hart, patient lay quietly. There was no visible sign of any strong pain, and she exhibited no signs of collapse or shock.

On Dr Berry Hart's arrival at 10 P.M. the administration of chloroform was at once resumed, and immediately on his palpating the uterus he diagnosed rupture. The foetus could be palpated out high up in the abdomen, and the empty uterus felt in the hypogastric region. He passed his hand through the rent, and seizing a leg of the child attempted to draw it back through the rupture, but was compelled to desist, owing to the bowel coming with it.

Dr Hart then proceeded to perform abdominal section; and cutting through the abdominal walls in the middle line, opened the peritoneal cavity and lifted out the child; he also removed the placenta which had been extruded from the uterus, a small portion only remaining attached to it. The uterus was then lifted forwards out of the abdominal cavity, and an attempt made to ligature it by a piece of elastic tubing. This tubing broke, and nothing else being available, a strong piece of twine was passed round the lower uterine segment and fastened securely. (The twine was afterwards replaced by a piece of the tubing generally used for ligature of uterus in Porro's operation.) The uterus was now amputated above the lower uterine segment. Some bleeding vessels were ligatured, and the abdominal cavity thoroughly douched out with hot water. There being only one sponge available, strips of clean cloth were used in addition. The ligature clamped the stump of the uterus a little above the lower limit of the rupture in the uterine



wall; but a piece of the peritoneum forming the fold of Douglas was pulled in under the loop of the ligature, and so cut off the peritoneal cavity from the vagina. The incision in the abdominal wall was closed by silk sutures, which were passed deeply, so as to include skin, muscle, and peritoneum; five or six sutures were used. The stump of the uterus was brought through the external incision, and secured in that position by transfixing it with knitting needles. The wound was dressed by iodoform gauze, and a binder applied over all. The antiseptic used was corrosive sublimate. During the whole course of the operation the patient had been receiving frequent subcutaneous injections of ether; brandy was also given.

The operation was concluded at a quarter past eleven; and the pulse being barely palpable and the patient collapsed, one of the house-surgeons left for the transfusion apparatus. In the meantime brandy was given by the mouth, and also digitalis in the form of the tincture. On the arrival of the transfusion apparatus, 27 oz. of sterilized salt solution, of strength of 3j. to the pint of boiled water was injected into the infra-clavicular subcutaneous tissue by means of syphon action. (Temperature of transfused fluid, 100° F.) This caused no appreciable improvement in the pulse, and the patient sank rapidly, the pulse being palpable at the radial artery ten minutes before death, which occurred at 20 minutes to 1 A.M.

The child was a male and still-born; the skin was peeling off in some places. The skin over right shoulder was much discoloured by a well-marked caput succedaneum on it. Placenta was normal.

This gives the account of the case from the spectator's point of view. How the case struck me is briefly as follows:—When I was summoned to the patient I took with me Braun's blunt hook for decapitation, not anticipating anything more serious. When narcosis was completed, however, and inspection was made of the bared abdominal surface, it was evident that the flattening of the recti as the patient strained pointed to something abnormal. On palpation, therefore, I was not surprised to be able to make out the foetus distinctly through the abdominal wall, and feel the body of the uterus apart from it and below the umbilicus. I accordingly diagnosed uterine rupture, and passed my hand into the vagina to ascertain its extent. I found it to be a huge one at the upper limit of the lower uterine segment posteriorly, easily admitting the entire hand. Blood poured through the rent, and as I believed the case to be, if not hopeless, a very bad one, I thought it best to attempt delivery of the child and placenta through the rent, and then to see what next could be done in the way of treating the rupture by the iodoform gauze tampon, as has been recently practised so successfully by Leopold and others. I accordingly seized the foot of the child and drew it down, but

speedily desisted, as I found that with it the small intestines were descending through the rent. No course was therefore left to me but the performance of abdominal section, and I did this all the more readily as I saw I could deal with the rent then either by supravaginal amputation of the uterus or otherwise, as I thought fit. One difficulty was the armamentarium, as when mustered it only amounted to one knife, indiarubber tubing, needles and thread, one pair of Péan forceps, and one sponge, which an obliging but tipsy female neighbour sacrificed for the emergency. The house was a hovel, and the light scanty, but everything depended on speed, and sending to hospital would have involved nearly an hour's delay. When the abdomen was opened venous blood poured out, so that I at once seized the uterus and passed tubing round it. Part of the rent was still below the level of the tubing, but I was able to pull loose peritoneum from the pouch of Douglas below the constricting tube, and thus shut off the vaginal from the peritoneal cavity. I then cut off the uterus above the ligature (supravaginal operation—Prevôt's operation), made a careful peritoneal toilette, and closed the wound as already described. During the peritoneal toilette large clots were removed from the flanks. From what has been said, it will be seen that abdominal section was imperative here to extract the child and placenta. The method of treating the rent adopted seemed to me to be the best for this special case; but I wish to point out that various methods may be employed, and it requires a statistical record of all cases to help us to settle which gives the mother the best chance. I therefore now wish to make a few remarks on the treatment of uterine rupture in general. In cases of rupture where the presenting part is still in the genital tract, it is evident we must deliver it in such a way as to avoid upward tension on the uterus, and therefore craniotomy or decapitation as necessary should be quickly employed. If the rent is not extensive, local irrigation with a dilute corrosive lotion, drainage, and abdominal pressure, or tamponnade of the uterus, vagina, and rent, with iodoform gauze should be performed; when the rent is more extensive, the edges should be approximated with tenacula while the tampon is being applied.

With an extensive tear and escape of child and placenta, or any one of them, into the cavity, laparotomy is imperative for extraction and peritoneal toilette. Extensive tear means bleeding into the peritoneum, and great risk of ultimate septicæmia if the blood be not removed. The treatment of the extensive rent is the next question. Suturing alone is ineffective, takes long, and has not been followed by good results. It is in such that our choice lies between Prevôt's amputation or careful tamponning vaginally and peritoneally with iodoform gauze. Recently Coe has had a successful case where he amputated the uterus and sutured the right utero-sacral fold. In sixteen cases of this amputation five recovered. Leopold, however, has recently recorded a case where the rent

involved three-fourths of the lower uterine segment, and where the uterus was only attached by the left broad ligament. In this case laparotomy was performed, the pouch of Douglas plugged with a long strip of iodoform gauze, which was applied to the edges of the tear, brought round between the right side of the uterus and pelvic wall, into the vesico-uterine pouch, and its end out at the abdominal wound. The uterine cavity and vagina were plugged with another strip. These were left in for fifteen days, and the patient made an uninterrupted recovery. In seven cases treated thus, Leopold saved two. From this I think we should all endeavour to give such cases the chance that operative treatment holds out. Many of them are hopeless, but even the most skilled prognosis is sometimes at fault, and it is not the duty of any man in such emergencies to fold his hands and say the case is hopeless, the woman must be left to die.

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## Part Second.

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#### REVIEWS.

*A Text-Book of Mental Diseases, with special reference to the Pathological Aspects of Insanity.* By W. BEVAN LEWIS, L.R.C.P. (Lond.), M.R.C.S. (Eng.), Medical Director, West Riding Asylum, Wakefield; Lecturer on Mental Diseases at Yorkshire College. London: Charles Griffin: 1889.

THE days were when the patronage of those who wished to study insanity was divided between the large manual of Bucknill and Tuke, and the shorter lectures of Dr Blandford. Now there are so many claimants for the notice of the student and the practitioner, that an apology for the introduction of a new book is not out of place. Dr Bevan Lewis pleads that a disproportionate amount of attention has been paid in former text-books to the clinical aspects of insanity. He himself wishes to deal more fully with the

organization of the material substratum of mind and the evidences of morbid change to which it is liable. He gives 114 pages to the anatomy and histology of the nervous centres, and 109 pages to the pathological section; while to the clinical section, which occupies the middle of the volume, he devotes 316 pages.

The writer of a book on insanity is no way obliged to give any account of the anatomy and physiology of the brain; but Dr Lewis has gone over the ground and made his own observations, and has on some points his own peculiar views, which he prefers to state in his own words, before he deals with the pathology of the nervous centres. Though the study of the anatomy of the brain has made great advances within the last thirty years, it may still be asked, How do all these elaborate descriptions help us to understand the *vivida vis animæ*, the inscrutable power of thought? When one knows the anatomy of the heart and vessels, one knows what takes place when they are in action. When one learns the histology of the kidneys, a very few words are needed to explain the functions of these organs; but after reading Dr Bevan Lewis's laborious attempts to explain the divers shapes and distribution of the brain cells, and fibres, and neuroglia, one scarcely feels more learned without being much the wiser.

That Dr Lewis is himself better satisfied we may judge from the following passage,—“A due estimate of the nerve-cell as the elementary unit of the nervous mechanism is now universally recognised as essential to an intelligent appreciation of the phenomena of cerebral activity, whether from the physiological or pathological standpoint. That the absence of the elaborate cell mechanisms of the cortex and their imagined replacement by a perfectly homogeneous structureless matrix in which the nerve fibres lost themselves, would introduce into our problems in the present state of physiological science inextricable confusion, is self evident, since the phenomena of functional differentiation would then remain to us a profound mystery, and the simplest correlation of mind would await an explanation.”

We certainly never heard it explained how the protean shapes of the nerve cells or their arrangement in layers help in the manifestation of thought. The separate functions given to cell and molecule and nerve fibres in the cortex are mere guesswork, and no human memory can long hold together the descriptions given by microscopists of their labyrinthine arrangements. At any rate Dr Lewis is able to attempt some explanation of mental derangement from what he has seen through the microscope, and as experience accumulates, it may be hoped that his guesses and deductions will become surer. A novel feature in his book is the function which he assigns to the spider cells, or Deiter's cells. Round each nerve cell, he tells us, there is a vascular loop, and wherever the bloodvessels are most frequent we have a greater development of the lymphatic system of the brain, a sponge-like arrangement of the cortex, allow-



ing of a free circulation of plasma round the nervous elements. To these spider cells he assigns an important part in the absorption of effete matters. They constitute the distal extremities of the lymph connective system, hence Dr Lewis calls them phagocytes, or scavenger cells. He finds them increased in quantity in senile insanity and other diseases attended by reduction of mental activity, and also in vascular affections resulting in retrogressive changes, and a reversion to a low type of mental structure. In man these scavenger cells are not abundant; but they are more frequent in the Barbary ape and in the cat, and are profusely supplied to the pig and sheep. Why such wealth of apparatus for absorption should be afforded to these beasts we are not informed. It seems more to the point to learn that "it is an undoubted fact that any arrest to the escape of perivascular lymph from the cortex is immediately followed by a morbid development and hypertrophic condition of this system of spider cells, of the 'lymph—connective system.' Meynert long since drew attention to their frequent presence as associated with congestion and degeneration of the lymphatic glands of the head and neck, and we have assured ourselves of the frequent association of this morbid development in tuberculosis, and in several affections of the cortex and its membranes which lead to obstruction of the perivascular lymph channels."

The value of Dr Lewis's description of the normal structure and pathological alterations of the brain is much increased by the fact that they are not *résumés* of other men's descriptions, but the result of close original examinations. It is only to be expected that Dr Lewis should occasionally disagree with previous observers; thus he takes occasion to regret that Meynert considers the giant cells which Betz has found in the anterior central gyri as of no importance. Our author does not mention that Golgi questions the existence of these large cells supposed to have something to do with the motor impulses. After all, we can make very little of this fact, even when admitting it. As Dr Lewis himself observes, we might expect smaller cells to have more energy, as they can take up nutritive material more rapidly; he even suspects that big nerve cells are simply old cells.

The clinical portion describing the different manifestations of insanity shows powers of observation of a different character. Insanity is treated as a brain disease, manifested by excitation or depression, attending different periods of life, such as puberty or senility, or following different morbid conditions, such as epilepsy or alcoholic intoxication. The conception of an inborn tendency to divergence of thought and heightened emotion, slowly but surely evolving itself in particular ways, is not entertained by the author, though he has some remarks upon the mental proclivities of youth, and their tendency to exaggeration and unhealthy action. We can find no mention in the book of *primäre verrücktheit* or *paranoia*, without which German authors on insanity cannot get on nowadays.



The chapter on epileptic insanity seems to be especially well done, the result of a careful analysis and the study of a large number of cases. The chapters on general paralysis also bear traces of very careful original work. The pathological section is written with great care. Dr Lewis has made a special study of what he calls the vacuolation of the nerve cell and nucleus, the appearance of round cavities highly refracting light, always accompanied by granular degeneration. They seem to be the result of imperfect oxidation, and are observed after poisoning with phosphorus (which affects the red corpuscles, the carriers of oxygen), and also in senile dementia, and that following chronic alcoholism.

Dr Lewis will not admit that in epileptic insanity the characteristic lesion escapes detection through the microscope; he finds it to consist in a degenerative change of the irregularly shaped nerve cells of the second layer of the cortex, the nuclei being first involved. Later on, this degenerative process passes on to vacuolation. Dr Lewis denies that in epileptic insanity the convulsive seizures are the agencies whereby the cerebral activities underlying mental evolution are injuriously affected. He regards the fit as simply betraying the nutritional impairment which is the origin of the convulsive discharge. Without pretending to have made anything beyond a naked eye study of the pathology of epilepsy, the writer of this review is convinced that an epileptic fit is often an event of grave clinical importance. Sometimes it leaves no perceptible after-effects behind it; but at other times, or in other cases, it is followed by strange conduct, or mental dulness, which slowly passes away.

Dr Lewis treats the primary lesion in general paralysis as in the bloodvessels. He gives no appreciation of Tuzcek's observations, who holds that in this disease the nerve fibres give way before the nerve cells. English microscopists, indeed, seem to have little attention to spare to the examination of the fibre, assigning, as they do, an unwarranted importance to the nerve cell.

Though the merits of Dr Lewis's treatise are well sustained throughout, it is likely that students will be most inclined to consult the book for information on pathology. It undoubtedly presents both the speculative and pathological element more than what is called the practical, *i.e.*, what is of immediate use in helping a man to deal with the insane or answer examiners' questions about insanity. The aim of the book is to exhaust the subject rather than to glide over it. There are no disquisitions upon responsibility, nor chapters upon the law of lunacy, nor directions how to fill up lunacy certificates, as are generally given in text-books of insanity. The very originality of the work makes it somewhat difficult to read, and this difficulty is often increased by sentences too long and involved.

The author gives a novel appearance to his pages by an attempt to assist the attention of the reader by printing some important words in larger letters, and others in italics.

The text is illustrated by eighteen pages of lithographs. These are done by Mr Danilsson from drawings by Dr Lewis, and are worthy of special praise. There are also six woodcuts from German sources, and three charts, all adding to the clearness of the book.

On the whole, this is a work of great merit, which should be consulted by all who wish to master the subject of insanity; there are passages in the book affording a fulness of information which it would be difficult to find in any other treatise in the English language.

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*The Past and Present Provision for the Insane in Yorkshire, with Suggestions for the Future Provision for this Class.* By D. HACK TUKE, M.D., LL.D., etc. London: J. & A. Churchill: 1889.

IN a reprint of the Presidential Address to the section of Psychology at the annual meeting of the British Medical Association at Leeds, we are able to follow what Dr Hack Tuke has pointed out in relation to the increasing number of the insane in Yorkshire. An interesting historical account of the older asylums is given, as well as data of the successive attempts made to provide for the then unrelieved mass of the insane in the county. Dr Hack Tuke shows that the ratio of insanity to the general population has increased up to 1 in 560.

He is of opinion that for chronic harmless cases more means for disposing of them might be made in the workhouses by arranging wards exclusively for such cases, which opinion is shared in by the superintendents of most of the larger asylums in Yorkshire. There is little doubt that the increase of insanity is directly traceable to the physical degeneration of the people in the large manufacturing towns. The number of cases of general paralysis is a marked feature in most of the Yorkshire asylums, and would seem to indicate an increase of intemperate habits and syphilis.

Dr Hack Tuke recalls with justifiable pride what has been done by his own ancestors to better the condition of the insane and to provide accommodation for lunatics in Yorkshire. The statistical information collected in this pamphlet will be found of great value by those who make a special study of insanity.

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*Hygiene and Public Health.* By LOUIS C. PARKES, M.D. London: H. K. Lewis: 1889.

THIS is an excellent little book, and one for which there is plenty of room. With the greatly increased attention which has recently been bestowed on the study of public health in the universities and medical schools throughout the country, it was to be expected that a corresponding activity in suitable literature would follow, and that

the practical monopoly of the market held by Parkes' *Practical Hygiene* and Wilson's *Handbook of Hygiene* would be assailed. These, of course, are both extremely good books, but neither could be called a good elementary text-book of hygiene; for while the former contains a great mass of information of special interest only to the army medical doctor, the latter is somewhat unequally written, and more a "handbook" for medical officers than a suitable text-book for students.

Dr Louis Parkes has attempted to supply the want, and give us a simple and clear account of the different subjects embraced under the term Public Health. In this we think he has succeeded. His style is clear and pointed, and the treatment of the various subjects consistent and logical. The diagrams, of which there are a large number, are good and apposite, and one is almost inclined to wish that they had been more numerous. It was scarcely necessary to add an appendix of a few standard solutions for quantitative analysis, seeing that the methods for the practical examination of air and water are (rightly, we think) merely mentioned, and cannot be intended for use in the laboratory. This, however, is a small matter, and on the whole we can highly recommend the book as an elementary text-book, and wish it every success.

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*London (Ancient and Modern) from the Sanitary and Medical Point of View.* By G. V. POORE, M.D., F.R.C.P. London: Cassell & Company, Ltd.: 1889.

THIS little book contains two addresses, one on London from a sanitary point of view, the other on London from the medical point of view. Of these the former is the one of most general interest and value. We can heartily recommend its perusal by any one intending to devote himself to metropolitan sanitary reform, or who takes an interest in the various sanitary questions of a great city; for in it he will not only get a striking sketch of the rapid growth of London, but also a most just and thorough appreciation of the almost insurmountable difficulties which have to be faced by the County Council in improving the sanitary conditions of London. The questions of water supply and the disposal of sewage in the metropolis are almost national in their importance and difficulties, but that of overcrowding is one with almost an equal influence on health, and which the County Council have ample facilities for attacking.

London from a medical point of view traces, in an interesting way, the progress of medicine in London from Chaucer's time down to the present day, and the author rightly observes that this development must be kept in mind when considering its sanitary history. The concluding remarks on modern medical schools and examinations contain some statements to which exception will be taken by many, certainly the one which states that the University

of London has had a greater effect for good upon medical education in this country than all the other universities and medical corporations put together.

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*Food in Health and Disease.* By J. BURNEY YEO, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London, and Physician to King's College Hospital. Cassell & Co's. Clinical Manual Series. London: 1889.

DR BURNEY YEO's little book on "Food in Health and Disease" cannot fail to prove of the greatest use to the practitioner. Usually, as a student, he has received little or no instruction on the important subject of dietetics, and starts practice with the most vague ideas in regard to how to feed his patients. Of course, until our knowledge of the general processes of metabolism, both in health and disease, has been enormously increased, no strictly scientific rules can be laid down for the therapeutic use of diet. But every practitioner of any experience knows how valuable an aid in treatment of disease is the patient's food.

Dr Yeo wisely starts by giving an account of the science of dietetics. We may at once say that this is the least satisfactory part of the book. The great and fundamental point that the object of food is to supply *energy* is not sufficiently emphasised. The matter lost simply depends upon the energy produced, and it is the latter, and not the former, which determines the amount and nature of the food supply. In the light of the recent researches of Hirschfeld, Klemperer, and others, this becomes a matter of prime importance.

In the next section of the first part we find considered clearly and with sufficient fulness the composition, mode of digestion and absorption, and the cooking and preparation of various foods, animal and vegetable.

Then follows a chapter on the scientific basis of dietaries and rations which is not quite equal to the rest of the book, inasmuch as the more recent contributions to dietetics are ignored. This chapter is naturally succeeded by one dealing with the various public dietaries.

Two of the most useful and important chapters in this section are those which deal with—Food in Relationship to Age, and the Relative Values of Animal and Vegetable Diets.

The second part of the book treats exclusively the question of diet in disease. In this Dr Yeo considers the appropriate diet in various pathological conditions, and gives an admirable account of various of the so-called Diet Cures.

The appendices on hospital dietaries and select recipes for invalid dietary will be found most useful.

Altogether the author is to be congratulated on having given us a most judicious, clear, and succinet account of the subject.



*A Text-Book of Animal Physiology.* By Wesley Mills, M.A., M.D., L.R.C.P. (Eng.), Professor of Physiology in McGill University and Veterinary College, Montreal. New York: D. Appleton & Co.: 1889.

DR WESLEY MILLS' preface promises more than his book performs. In the former he very properly criticises severely the illogical habit of at once and without due caution applying to the human subject all observations made upon the lower animals, and maintains that the student should not be led to imagine he is acquiring a knowledge of human physiology while he is merely studying a summary of the physiology of many different animals. In attempting to carry these principles into practice, he has not, however, succeeded in producing a text-book which will prove of value to the student of medicine. This failure is largely due to his entering much too fully into general biological and even purely morphological considerations, with the result that the more important physiological matters have to be dealt with in a too perfunctory manner.

We fully agree with Dr Mills that the object of subjecting the student to a course of physiology is not so much to store his mind with facts and principles, as to educate him in the methods of study and thought which he requires in his more strictly professional work. But this may be accomplished just as well by the investigation of the more practically important parts of physiology as by the consideration of matters of merely scientific interest.

A perusal of the individual sections of the work shows that they contain a good general, if somewhat superficial account of the main outlines of physiology. Beyond this they do not go; and the account given of many of these parts of the subject more directly bearing on medicine, as for instance the cardiac cycle and pulse, are not nearly sufficiently precise and detailed.

We are glad to see that the author has had the good sense to exclude most of the tables of percentage compositions of the various secretions which so disfigure most physiological text-books, and which, we do not hesitate to say, are worse than useless to the student. He also appears to have been at considerable pains to weigh the evidence on the many disputed points in the science of physiology, and to give fair and just conclusions without burdening his reader with too many of the contending arguments. On many points, however, he does not appear to have made himself cognizant of the progress of modern research, and has too readily adopted the stereotyped teaching of the text-books.

Looking at the work as a whole, we cannot but feel that the author has attempted too much or has not attempted enough. There is a want of proportion about the work which alone would prevent its taking its place among the popular text-books of physiology.

*Outlines of the Clinical Chemistry of Urine.* By C. A. MACMUNN, M.A., M.D. (Dub.) London: J. & A. Churchill: 1889.

IN any treatise from the pen of so admirable and indefatigable an investigator as Dr MacMunn, we naturally expect to find work of more than ordinary interest. His *Clinical Chemistry of Urine* does not disappoint our expectations. We might, if so minded, carp at the word *Clinical* in the title, and object that the work is in no sense a *Clinical* handbook, but rather a scientific treatise. The name, however, is of little moment.

One naturally at once turns to the chapter on the pigments of the urine, since it is in this most difficult field that Dr MacMunn has done so much and such admirable work. It is needless to say that it is in all respects admirable. Our only regret is that the author does not give at least a summary of the methods employed in his investigations. We must remember, however, that this is fully dealt with in his "Spectroscope in Medicine."

Two other chapters strike us as of special value and importance, that upon acetone and its allied bodies, and that upon the aromatic compounds of the urine. Both are thoroughly clear, and contain all the most valuable of the many recent contributions to these subjects.

It is, perhaps, hardly fair to expect uniform excellence throughout the whole of a work dealing with so large a subject. We fail to understand why the author has considered it necessary to introduce his subject by a chapter on "The Functions of the Kidney and the Mechanism of Urinary Secretion." It contains nothing more than is to be found in all the ordinary text-books, and leaves all the more recent work on the subject unnoticed. Nusbaum's experiments are quoted without any reference to Adamis' criticism upon them, while any account of Munk's interesting researches is absent.

Two or three parts of the work are also marred by similar omissions of important recent work. We find no allusion to Pflüger and Bohland's figures in regard to the average daily excretion of nitrogen, while Pflüger's examination of Liebig's mercuric nitrate method for urea, and his modification of the process, are unnoticed. Similar omissions occur throughout the book, but after all these are minor faults, and there can be no doubt that the physician who wishes a thoroughly good treatise on the urine in the English language will find it in the present work, though it can hardly take rank with such works as Salkowski and Laübe's *Ueber den Harn*, or Loebisch's *Harnanalyse*.

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*The Surgery of the Kidneys: being the Harveian Lectures*, 1889. By J. KNOWSLEY THORNTON, M.C., etc. London: Charles Griffin & Co.: 1890.

THESE lectures are an exposition by the hand of an expert of

what is known and has been done, up to the present, in the surgery of the kidneys. No doubt they have been already seen and noted as they appeared in the weekly journals. In the form in which they are now published they will be valuable for reference. There are nineteen excellent illustrations, which add to the value of the work.

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*Nerves of the Human Body.* With Diagrams. By ALFRED W. HUGHES, M.B., C.M., F.R.C.S.E., Lecturer on Anatomy, School of Medicine, Surgeons' Square, Edinburgh. Edinburgh: E. S. Livingstone: 1890.

THIS work is based upon the same general plan as that of Prof. Flower's *Diagrams of the Nerves of the Human Body*, but the plates are more numerous and the explanatory text fuller. The diagrams are very clear, but not so elaborate as those of Flower's book. There are a few which, we think, might be improved without rendering them unduly complex. Thus the diagram of the optic nerves in Plate I, although it shows the eyeballs and the optic nerves, commissures, and tracts, does not indicate the course of the nerve fibres. It might easily have been made so as to impress the student with the important fact that the fibres from the outer part of the retina pass to the brain by the optic tract of the same side, while those from its inner part cross in the commissure to the optic tract of the opposite side. Again, in the diagrams of the spinal plexuses their communications with the gangliated cord of the sympathetic are not represented. There is an excellent diagram showing the distribution of the cutaneous nerves to the head and neck; similar ones for the trunk and extremities would have been very useful.

The text contains a well-arranged summary of the main facts of the origin, course, and distribution of the cranial, spinal, and sympathetic nerves. It is a work that may be consulted with confidence by the student, and which he will find a useful aid in gaining a knowledge of the nervous system.

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*The Surgical Treatment of the Common Deformities of Childhood.* By WALTER PYE, F.R.C.S. Eighty Illustrations. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited.

THE author's intention in writing this book, as we gather from the preface, is to encourage the treatment in general hospitals of the common deformities by the simplest possible means. He evidently disbelieves in special hospitals and elaborate mechanism. The object is a worthy one, and has been well carried out. While there is not much that is original in the book, and while many of the diagrams remind one of *Surgical Handicraft*, by the same author,

there are many useful methods and appliances here described which are not otherwise easily accessible.

The descriptions are clear, except when the author goes out of his way to make such a pleasantry as the following:—"They (exercises) must be performed with the head as well as with the trunk and limbs." The context shows that "head" here means intellect, but this is not at first by any means evident.

The directions for the application of poroplastic and plaster jackets are fully given. It is strange, however, that although some of Fourneau's Jordan's methods are explained, his valuable suggestion of laminated plaster splints should be omitted.

Separate chapters are devoted to the causes and treatment of wry-neck, of ricketty deformities, of genu valgum, and of flat-foot; several to the various forms of club-foot; and others to club-hand and nævi, to spina bifida, and to congenital dislocations.

The principle of strengthening the leg and foot muscles in flat-foot by exercise is ignored, the supporting plan, in its various modifications, being that alone recommended.

The chapters devoted to the various forms of club-foot, congenital and acquired, are especially good. The only suggestion we would make for a future edition is that more might be said about the after-treatment of such cases, and that mention might be made of Willett's operation for talipes calcaneus.

Practitioners who can find a space for this little book on their shelves will have no cause to regret buying it.

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*A Manual of Pathology.* By JOSEPH COATS, M.D., Pathologist to and Lecturer on Pathology in the Western Infirmary, Glasgow, and Examiner in Pathology in the University of Glasgow. Second Edition. London: Longmans, Green, & Co.

THIS excellent work has attained a degree of popularity which has necessitated the preparation of a second edition in a comparatively short time after the appearance of the first. This popularity has been altogether well deserved, for the first edition was a well-balanced piece of work, full of sound judgment and common sense, applied to a large experience and to careful observation of morbid processes. That the second edition should be an advance on the first is what should have been anticipated by those who know Dr Coats's progressive work.

In the part dealing with general diseases new sections on the nature, causation, and terminations of disease, teratology, and fever have been added. Under special diseases the thymus and thyroid and the eye and ear have been included. Two minor—if they may be so classed—alterations will be of decided value to the student, namely, a synopsis of contents at the beginning of each chapter, and some references to literature at the end of each section. This



latter is comparatively meagre, but it is sufficient to serve as an introduction to the student who may wish to extend his reading.

There is little in any chapter throughout the book to which serious objection can be taken, and even the most fastidious could cavil more at faults of omission than of commission. We heartily commend the book, and have little doubt it will continue to hold its place as a text-book in our schools.

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*Essentials of Pathology and Morbid Anatomy.* By C. E. ARMAND SEMPLE, B.A., M.B., M.R.C.P., Physician to the Bloomsbury Dispensary, etc. With forty-six Illustrations. London: Henry Renshaw: 1890.

For whom, it might be asked, is a book purporting to teach pathology in 154 pages written? The writer tells us it is for the medical student. What has happened to that class of our youth that they seek, more than in times past, to be fed with spoon-meat? How is it that all kinds of patent stuffing methods are patronised by them rather than face the perusal and mastery of a decent work, or follow a full and intelligible system of lectures? To discuss the question here would be out of place, but writings of this sort suggest it. The book, so far as it goes, is good enough; what we regret is, that there should be a demand for this class of thing, and that the information in it should be sufficient even for the examinations at the colleges. Men ought to be taught intelligently and not stuffed like geese for examiners' tables.

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*History and Pathology of Vaccination.* By EDGAR M. CROOKSHANK, M.B., Professor of Comparative Pathology and Bacteriology, King's College. Two Vols. London: H. K. Lewis: 1889.

As is indicated by the title, the author approaches the question of Vaccination from the standpoint both of the historian and of the pathologist. In the book the history comes first and the pathology last, but in Professor Crookshank's mind it is evident that pathology came first and history last, and that the researches of the historian have been subordinated to and guided by the views of the pathologist. Indeed, the work consists primarily of an unsuccessful effort to settle the question of vaccination in the light of the author's readings and observations as to the nature of cow-pox and the sources of vaccine lymph; and, secondarily, of an attempt to reconcile the facts of history with the conclusions thus arrived at.

Following Dr Creighton's lead, Professor Crookshank urges that cow-pox, in so far as it has any analogue in man, is not cow-small-pox, but cow-syphilis. Further, vaccine lymph has at one time or another been derived, not only from cow-pox, and from horse-pox, and from human small-pox cultivated on the cow, but also from

sheep-pox, and from cattle plague, and possibly, too, from goat-pox. In his argument as to the venereal nature of cow-pox we have more or less a repetition of Dr Creighton's views,<sup>1</sup> fortified by a reprint from the writings of Auzias-Turenne. Now and then we could almost suppose the author to be Dr Creighton himself. We read that "it is only when we have to deal with the early removes from the cow, or when the lymph reverts to its original untamed character, that we really appreciate what the symptoms of cow-pox are," and that so-called vaccinal accidents "are manifestations of the disease in its unmitigated form," and that "cow-pox lymph taken at a late stage will tend on some subjects to revert to its original virulency," and so on.

Perhaps the most interesting chapter in the book is that on Horse-pox, but we hardly think that many medical readers will arrive at the conclusions indicated by the writer. Jenner's theory, that cow-pox was derived from horse "grease," has long been looked on as a weak point in his system. But his contemporaries—Clayton, a veterinary surgeon, and Dr Loy of Whitby—both asserted that more than one disease of the horse received the title "the grease;" and the latter unquestionably did cultivate lymph for "vaccination" from the pustules of the equine affection. Ten years ago, Dr Geo. Fleming (now the chief Veterinary Surgeon to the Army), in a series of papers in the *Lancet*, urged that Jenner was right in asserting that the horse was subject to a disease corresponding to cow-pox in cattle, which latter disease could be established through inoculation with the virus of the former. Taking Professor Crookshank's chapter along with the statements of Clayton and Loy and the papers of Fleming, it would almost seem as if Jenner, even on this question, had not been so far wrong after all. Certainly he was wrong in thinking that cow-pox could be derived *only* from horse grease, but it appears quite possible that he was right in thinking that horse grease (or at least one form of it) could set up cow-pox in the cow. In the chapter in question, Mr Crookshank adduces one outbreak of horse-pox in which the virus was conveyed by coitus from one animal to another, and he urges this fact as evidence of the similarity of such diseases to syphilis. But the reasoning is entirely *ad captandum*. In the case of an attack of small-pox or like infectious disease, we readily believe that infection may be given to a healthy person by kissing or other close contact; and communication of such a disease by the one particular form of contact, coitus, suggests no question of the nature of the disease. The ability for copulation is granted *ex hypothesi*, and conveyance by this means gives no suggestion of small-pox being syphilitic in nature, or of small-pox or horse-pox or diphtheria or other infection having relationship with the "venereal" disease. And when, on page 461, Prof. Crookshank

<sup>1</sup> Recent numbers of the *Edinburgh Medical Journal* contain a critique of these views.

says, "Horse-pox is transmitted by coition," all that he has on his own showing any right to say is that "one outbreak is on record in which horse-pox was transmitted by coition."

Much fault has been found with Jenner for accepting as referring to genuine cow-pox the description of the disease discovered by Woodville in the dairy at Gray's Inn Lane. It is odd that a similar criticism seems applicable to Professor Crookshank in regard to his acceptance (p. 341, vol. i.) as genuine of the disease described as cow-pox by Clayton, a veterinary surgeon of Gloucester. Clayton says,—“In the cow-pox the teats seldom swell at all.” But a few pages further on we find a plate, executed from a drawing from nature by Crookshank himself, of a pap-disease which he saw in Wiltshire, and which he asserts to have been true cow-pox, where yet there is shown an enormous swelling of the teat; and in regard to which also we learn (p. 597, vol. ii.) that “all the milkers agreed as to the general characters of the malady, laying particular stress on the teats being red, swollen, and painful when handled.” As Professor Crookshank unhesitatingly accepts Clayton's description, he must conclude either that his own plate was taken from an entirely exceptional outbreak, which should not, therefore, have been used to exemplify the disease, or that, after all, the Medical Department of the Local Government Board had good grounds for doubting the exact nature of his Wiltshire disease. But when we find Clayton stating “that he never knew this disease extend itself in the slightest degree to the udder;” while Ceely, on the other hand, continually speaks of the vesicles and pustules and crusts, etc., which exist on the udders, we can only express our amazement that Professor Crookshank advances the writings of both these observers as referring to the same malady. Nor would we expect that a disease, on the severity of which the author never tires of dilating, should be so easily cured as Clayton alleges,—“He can at all times cure the cow-pox in eight or nine days, by his usual local remedies.” Professor Crookshank thinks vaccinators have taken lymph from various incompatible sources, but the sources from which he takes his descriptions of cow-pox are certainly no less incompatible. But since the author thinks Clayton correct, he should not have ignored the statement that when the disease “degenerates into ulcers, this generally arises from neglect in the incipient stage.” Like Dr Creighton, however, Prof. Crookshank holds these ulcers to be merely an exhibition of that severity of type which is inherent in cow-pox, and which constitutes part of the link binding it to human syphilis.

Regarding the horse grease doctrine, Prof. Crookshank says:—“It is interesting to note that after the publication of Pearson's pamphlet, and after the discovery of cases of cow-pox arising independently of horse ‘grease,’ Jenner avoided, for a time, any further reference to the origin of the disease.” It is interesting to note that this is not correct. Pearson's pamphlet was published in

1798, and Jenner's *Further Observations* in 1799, and in that work he elaborately defends his horse grease theory.

Prof. Crookshank agrees with Dr Creighton regarding the alleged influence of Jenner's Latin name for cow-pox, and he gives an instance of a medical man, Dr Fraser, "who was led by the term *variolæ vaccinae* to regard cow-pox as *modified* small-pox." But the accompanying quotation from Fraser contains positively not one syllable of proof that the term in question had anything to do with his opinion. Indeed, the inference to be deduced from the passage is very different. It is true that Fraser had concluded that small-pox and cow-pox were modifications of the same disease, but writing seven years after Jenner had coined the term *variolæ vaccinae*, Fraser says:—"My own opinion of the origin of this disease is certainly original, and I believed till lately that it was also singular." Clearly if the term in question had had the veriest fraction of the influence attributed to it by Creighton and Crookshank, Fraser would have had, long before 1805, abundance of evidence that his opinion was neither "original" nor "singular." But Fraser never dreamt that "*variolæ vaccinae*" covered any such view, for, in the same quotation he speaks of Jenner's opinion on the matter as "fanciful and absurd"—terms which he would hardly have applied to his own proposition, but which obviously refer to the horse-pox hypothesis.

On page 260 we have Prof. Crookshank misreading Jenner in a quite unaccountable fashion. "Having assumed," says Crookshank, "that his theory of the origin of cow-pox was correct, he (Jenner) continues the argument until it ultimately culminates in the theory of the origin, *ex animalibus*, of all infectious fevers, and many other communicable diseases of man." Then follows the quotation from Jenner on which this statement is founded. It is too long for insertion in full here, but the principal part is as follows:—"And from a consideration of the change which the infectious matter from the horse has undergone after it has produced a disease on the cow, may we not conceive that many contagious diseases now prevalent among us may owe their present appearance not to a simple but a compound origin? For example, is it hard to imagine that the measles, the scarlet fever, and the ulcerous sore throat with a spotted skin, have sprung from the same source, assuming some variety in their forms according to the nature of their new combinations? The same question will apply respecting the yaws and the syphilis, and, indeed, many other diseases." But the passage contains absolutely nothing to justify the Professor's extraordinary assertion regarding "the theory of the origin, *ex animalibus*, of all infectious fevers," etc.

At the end of the same chapter the author makes a curious statement. Referring to Jenner's original manuscript, prepared for the Royal Society, he says that, apart from certain speculations, "a Dorsetshire surgeon had done almost as much as Jenner."



Turning to the reference (p. 116) to learn the name of the surgeon in question, we find that Prof. Crookshank had the reasonable excuse for not mentioning it, in the fact that he does not know it. The whole statement is founded on a sentence in a letter from the Rev. Dr Bell of Swanage to the Secretary of the Jennerian Society.<sup>1</sup> "I know a medical man in this country who was greatly injured in his practice by a prejudice raised against him long ago for his intention of substituting the cow-pox for the small-pox." This was his "intention." That the volume is not adorned with a portrait of this surgeon (as it is with portraits of farmer Jesty and his wife), is doubtless due to the author's ignorance, not only of the hero's name, but of his whereabouts, "this country" being rather a wide field for investigation. All the same, one notes with interest the readiness with which, on proof so slender, the surgeon is hoisted into such prominence as anonymity will admit of, compared with the hesitation displayed in allowing credit or merit of any kind to belong to Jenner.

Early in Chapter VIII. we have an elaborate attack on Jenner in connexion with the case of John Baker, a boy whom he had inoculated with horse "grease," and who, as he tells us in his *Further Observations*, sometime afterwards died of a "contagious fever." But, says the critic, "the fact of the boy's death was omitted in the first account," and "why," he goes on to inquire, "should the fact of the boy's death have been omitted?" The answer he arrives at (following Dr Creighton) is that the boy had died of erysipelas resulting from the inoculation. To a plain man another answer is not so far to see. It is simply this:—The boy was not dead, or if he was dead Jenner did not know of it. Jenner took his *Inquiry* to London for publication some six weeks after he performed the inoculation, and there is not one iota of proof that the death had then occurred.<sup>2</sup>

Regarding the nature of the areola surrounding the vaccine vesicles, Prof. Crookshank points out that "in the third edition of the *Inquiry* the word *erysipelatos* is omitted." But there is really nothing very blameworthy or even very surprising in this. His use of the term erysipelas had been objected to by Pearson, who, in the *Philosophical Magazine* in 1799, had urged that the word *erythema* was more applicable, and in Jenner's second publication he makes only a partial defence of it, thus:—"In calling the inflammation that is excited by the cow-pox virus, erysipelatos, perhaps I may not be critically exact, but it certainly approaches

<sup>1</sup> It is doubtful if Prof. Crookshank is right as to the "Jennerian Society," which he seems to confuse with the Vaccine Pock Institution.

<sup>2</sup> In the *Inquiry*, dated June 21st, 1798, the boy is spoken of as having "felt the effects of a contagious fever in a workhouse soon after the experiment was made" (*i.e.*, March 16th, 1798), and we are told that, but for the circumstance of this fever, the variolous test would have been applied. His death from fever is not mentioned until the "Further Observations" published in 1799.

near to it." On page 278 the author insists on Jenner's responsibility "for assuming the existence of two kinds of cow-pox—a true and a spurious." But Prof. Crookshank has no right himself to assume that this was mere assumption on Jenner's part. Ceely, writing nearly forty years later, found quite a variety of spurious pocks, and, indeed, he considered that some milkers who imagined themselves protected against small-pox were really liable "from having been the subjects merely of the spurious diseases." And Klein's recent investigations give further evidence of the essential soundness of the position taken up so long ago by the now so plentifully abused author of vaccination.

Ceely, be it understood, is an observer in whom Prof. Crookshank has the greatest confidence. But when Ceely says what Prof. Crookshank does not agree with, namely, that the vesicles of cow-pox have, at a certain stage, "more or less of central depression," the words are held by the latter to indicate, not "more" depression, nor even "less" depression, but no depression at all. And to support this view Prof. Crookshank finds it necessary to state, in the very mildest kind of language, that Ceely's first plate of cow-pox sores was simply not genuine—that, in fact, the plate was partly invention and partly founded on an equally untrustworthy plate by Sacco.<sup>1</sup> He goes the length of saying, not that the plate represented the vesicular stage of cow-pox as Ceely saw it, but "as he always wished to see it." Ceely's second plate, however, agrees with Prof. Crookshank's notions, and accordingly he says it "is a faithful picture of the disease on the teats as ordinarily met with." We turn now to what Ceely has to say of his own plates, and for this purpose we have to go to the original papers, as Prof. Crookshank's reprint of Ceely fails us, Plate I. being omitted, partly, doubtless, on the ground of cost. Ceely describes his first plate as exhibiting "the casual cow-pox on the teats and udder of a black-and-white milch cow," and he gives the difference between the two plates quite distinctly. In the first "the disease is at its acme," while the second "exhibits the later stages of cow-pox." But Prof. Crookshank gives no hint of this. He says, in effect, that the first plate is a falsehood; while the second, avowedly representing a late stage of the disease, with crusts, ulcers, etc., due, according to Ceely, to the manipulations of the milkers, is given as "a faithful picture of the disease"!

Like Dr Creighton, Professor Crookshank enlarges on the severities of casual cow-pox on the hands of milkers. "Pearson," he tells us, "classified the cases of which he had received information into—(1), those in which the patients are inflicted with so much painful inflammation as to be confined to their beds for several days, and have painful phagædenic sores for several months; and (2),

<sup>1</sup> So far as we can discover, Ceely had never seen Sacco's plate. While he quotes from various authors, home and foreign, he does not once mention Sacco's name.

those cases which are so slight that the patients are not confined at all, but get well in a week or ten days." But it is not the case that Pearson "classified" the cases as above. His words are, "I am instructed by my communications that *the extreme cases are*" (1) and (2) as stated. The essential importance of the distinction between Pearson's statement and Professor Crookshank's paraphrase of it is obvious. Ceely's descriptions of casual cow-pox on the milkers' hands are given in long extracts in volume i. But to learn what Ceely himself thought of the severity of some of the symptoms and cases, we have to turn to the reprints in volume ii. Here, for example, are one or two statements of importance. "Although there can be no doubt of the greater severity of the local and constitutional symptoms attending the casual cow-pox on the hands, etc., it is equally clear that these symptoms are greatly aggravated by the rupture of the vesicles in parts so vascular, tense, and sensitive, and subject to motion." Again, "From an early period, struck with the fidelity of Jenner's description, and always having recognised his distinction of the primary and secondary symptoms, I have looked upon the local affection, which is so much under the influence of temperament, tissue, etc., as of inferior importance . . . ." Then, as to choice of lymph, Ceely says, "Vesicles which have been broken at an earlier period are not much better, and, on account of their liability to afford more than the specific secretion, may prove highly objectionable to some individuals."

In the chapter on the "Progress of Vaccination in England" he says that, "especially towards the last few years of Jenner's life," the evidences of failure were "overwhelming; but the failures were attributed to the use of improper lymph, or to badly or inefficiently performed vaccination," etc. Most people will see no reason to disagree with opinions which attached importance to such causes of failure, while the fact that post-vaccinal small-pox got more common twenty years or thereby after the introduction of vaccination (Jenner died in 1823) is exactly what we in the present day would expect to find as a result of the absence of re-vaccination. The long extracts which Professor Crookshank gives from the observations of Dr Alexander Monro are entirely needless. In 1806, one of Monro's children, an infant, was vaccinated, the result being a single pustule one-sixth of an inch in diameter. In 1818, the boy "suffered from symptoms which developed into an attack of small-pox." Another child was vaccinated in 1803, and caught small-pox also in 1818, and to the detailed narration of one of these occurrences Professor Crookshank deems it worth devoting several closely printed pages. But after all he is forced to confess that Dr Monro, with such facts before him, still continued to believe in the anti-variolous value of vaccination.

And in the same way with Professor Crookshank's book before us, and after a somewhat careful perusal of it, we also are forced to

confess that we see nothing in it to shake in the slightest degree our faith in the value and in the virtues of the Jennerian prophylactic. Prof. Crookshank adduces no facts in contradiction of universal experience that vaccination properly performed is for many years a powerful protection against both attack and death by small-pox.

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*The Australian Medical Journal.* Edited by Drs MOORE and SYME, Melbourne. Published by Stillwell & Co., Melbourne.

THE journal before us is No. I. of Vol. XII., and is the first number issued directly under the auspices of the Medical Society of Victoria. Until January of this year, although the proceedings of that Society were contained in the Journal, unless members purchased it they received no record of the Society's transactions; now, however, the annual subscription to the Society is to be two guineas, and copies of the Journal are to be sent to each member. This change in the relationship of the Society to the Journal will tend, it seems to us, to restrict the scope of the latter; and it would have been well, perhaps, to limit its name to the "*Victorian*" Medical Journal.

Like most provincial medical journals in this country, it consists of original articles, society and hospital reports, reviews, and abstracts. The present number contains one original article, on "Electrical Illumination of the Bladder, illustrated by a Case." The case quoted is one of tumour of the bladder, and illustrates one of the difficulties in cystoscopic examination; but we cannot agree with the conclusion of the writer that the cystoscope is useless in the examination of tumours of the bladder. On the contrary, it is in these cases that it is chiefly valuable.

The report of the Medical Society of Victoria, read at the annual meeting, is interesting, and shows that Society to be in a very flourishing condition.

The general arrangement of the Journal is good, and leads us to hope that it will continue to be a valuable contribution to the medical literature, not only of Australia, but of this country.

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*Annales de Dermatologie et de Syphiligraphie.* Fondées par A. DOYON. Troisième Série. Janvier, Février, Mars, 1890. Paris: G. Masson: 1890.

*The British Journal of Dermatology.* Published Monthly. Edited by MALCOLM MORRIS, London, and H. G. BROOKE, Manchester. January, February, March, April, May, 1890. London: H. K. Lewis: 1890.

BOTH of these journals appear this year under altered circumstances. EDIN. MED. JOURN. XXXVI.—1. H



stances. The French *Annales*, enlarged and printed in a clearer type, has as its editors the well-known names of Besnier, Brocq, Doyon, Fournier, Horteloup, and Vidal, with the indefatigable Dr H. Feulard as their secretary. Its familiar blue cover is now replaced by one of fawn; and within, in the numbers before us, are to be found valuable articles by some of the staff on Erythema, on Keratosis Pilaris, and on Keloid; while Louis Wickham contributes an excellent account of what is known regarding Paget's disease of the nipple, with special reference to a possible parasitic origin. The British Journal also has a wider and a fuller page; and among much good matter we may especially note a paper by Dr Pringle on Congenital Adenoma Sebaceum; by von Hebra, on Lichen Ruber and its connexion with Lichen Planus; by Dr Paul, on Toilet Soaps; and by Dr Brooke, on the Preliminary Treatment of Lupus Vulgaris; and a highly interesting description of a recent visit to Dr Unna's clinic in Hamburg, which affords some insight into the methods pursued by the energetic and Ulysses-like director. Both periodicals faithfully reflect the activity which more than ever prevails in the scientific study of dermatology and of its congener, syphilis.

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*Thir Notandums, being the Literary Recreations of Laird Cantiearle of Mongrynen (of Kittle Memory): to which is appended a Biographical Sketch of James Dunlop, Esq.* By JOHN SERVICE, L.R.C.S. and P. Ed. Edinburgh and London: Young J. Pentland: 1890.

THOSE who could read with understanding and appreciate the life and recollections of Dr Duguid of Kilwinning will welcome this little book written on the same lines by the same author. The laird broke his leg, and the doctor told him he was to lie "on the braid of his back for sax weeks or mair." He diverts his enforced leisure by many cracks with the doctor, and by writing out some of "thir notandums." These stories, jokes, and sketches are thin and slight, but all written in excellent Scotch; and, to use his own words, "If ony whillywha o' an Englisher should yirr and mak a kilfudyoch aboot the words he doesna ken, then let the puir body gang hame and tak a wee tass o' whusky and try't again. Syne if that winna clear the bit heid o't, let him get in a tappit hen and send alang the lass for the doctor and me, and we'll do the best we can to insense the bit cratur into its mither tongue, that it hasna been speakin this twa hunner year." Two or three very old classic Scotch stories are put into the laird's mouth which he should have been ashamed to tell over again; but probably, to the majority of the readers, they will be quite new, because quite unintelligible.

## Part Third.

### MEETINGS OF SOCIETIES.

#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

##### SESSION LXIX.—MEETING VI.

*Wednesday, 19th February 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

*Dr John Strachan*, Dollar, in opening the discussion on THE PHYSIOLOGY OF EDUCATION, said,—If an apology were needed for introducing in a medical society a subject dealing with the work of another profession, it would be sufficient, I think, to point to the intimate connexion so frequently found to exist between the school work and the ill health of children. A few years ago a parliamentary commission, appointed to investigate into alleged prevalence of over-pressure in English schools, reported that a number of cases of serious illness, and some of actual death, had undoubtedly been caused directly by school work. Most of us could point to similar cases, which may well be regarded as very extreme, and are to be estimated, not by their number but by their significance, as indicating a certain tendency in school life. There are many degrees of injury short of death. The occurrence of even one death or serious illness, caused directly by school work, is sufficient to stamp that work as in some way inconsistent with the laws of health, and to suggest the existence of much evil in connexion with it, which may never come to the knowledge of the public. In medical practice we have all frequent occasion to observe close relation between prize taking at school and pale cheeks, poor appetite, headaches, sleeplessness, and other indications of deteriorated health, with a tendency to nervous affections at the time or in later years. These and other facts which might be mentioned fully justify the inference that school procedure runs upon unsafe lines, and that the danger to the pupils is in proportion to the pressure under which it is driven.

If we seek an explanation of such a state of matters we may find it sufficiently indicated by Prof. Bain of Aberdeen in his book *Education as a Science*. In that book of 438 pages the “Bearings of Physiology” are disposed of in less than three pages. In these we find the following passages:—“The Science of Physiology . . . . is quite distinct from the process of education.” “The art of Education assumes a certain average physical health; and does not inquire into the means of keeping up or increasing that average.” “The inquiry must proceed upon our direct experience in the work of education; with an occasional check or caution from the established physiological laws.” The assumption here is that education has to do with something apart from, or only loosely associated with, our physical being, which is looked upon rather as

a hindrance by "occasional checks" of the kind I have just referred to, than as having any direct bearing upon the work. It is scarcely necessary to point out to this meeting that, apart from moral training, education has to do entirely with brain action, which is as purely physical as is the action of any other organ of the body. It is the result of physical growth and development, is kept up by nutrition and blood change in the part, is subject to fatigue, and is directly affected by injury and disease. Instead, therefore, of physiology being distinct from education, it is the basis upon which all true and safe educational procedure must rest. It is true and may be right that the teacher does not inquire into the means of keeping up the health of his pupils, just as the builder may not trouble himself about the principles of architecture upon which his plan is drawn. It is essential, however, that the builder's plan be correctly drawn upon sound principles, otherwise his work is certain to prove a failure and a danger. The medical profession, as the only recognised authorities in physiological law, are or ought to be in the position of architects in educational procedure, and it is for them to lay down the plan upon which the practical educationist may work with safety. If they neglect this duty, it is certain to be neglected, as no one else is in a position to take it up. It is for such a meeting as this to consider how far responsibility for educational failure and disaster may be held to rest upon our shoulders, and also, perhaps, how far the physiological knowledge of our profession should be applied and paid for by the State.

Without occupying your time with further preliminary remarks, I shall endeavour to give a very brief sketch of the physiological facts and principles which I consider ought to rule in all educational procedure; after which I hope the question will be taken up by some whom I see present much better qualified than I am to speak with authority on the subject.

Whatever views may be held with regard to the abstract principle of mind which it is the special province of education to cultivate, there can be no doubt of the fact that mental action is entirely dependent upon the mechanism and functional power of the brain. The primary object of education must, therefore, be to secure a well-grown, well-developed, healthy, and vigorous brain as the foundation upon which to rear a well-furnished and well-trained mind. If there were really any antagonism between these two objects, which there is not, the former ought to have the preference. A strong, healthy brain will do much to educate itself, and will be thoroughly effective so far as its knowledge goes; whereas a weak, ill-developed brain will be weak in thinking power, however stuffed it may be with verbal learning.

The first point to be considered with regard to the brain of the child is that it is immature. From the embryo it has made enormous strides in growth and development, and at the commencement of school life has advanced a long way in knowledge and intelligence. It is yet, however, far from complete, and the processes of

growth and development, along with the acquisition of knowledge and ideas, are still actively going on. Upon these must entirely depend ultimate brain power as applied in mental action; and it is to them, as the physiological basis of education, that I wish especially to direct your attention.

Growth is a continuous process, and to attain to the highest results it must go on smoothly and uninterruptedly from birth to maturity. It no doubt varies considerably at different times, but each day and each hour adds its special increment to the growing organism. The ultimate result is the complement of each day's addition during the period required to complete the human frame. This period has a certain *fixed* limit, when no further addition can be made. For complete growth every hour up to this point must be fully utilized, and any interruption of the process is so much deducted from ultimate size and strength. In the transverse section of a tree we can examine, in the concentric circles caused by the winter's cessation, the result of each year's growth. A cold, unfavourable season is indicated by a thinner circle, which is a curtailment to the same extent of the ultimate size of the tree. A similar evidence of defective growth may be seen in the part of the finger nail which has grown during a severe illness, and which is distinctly thinner than the rest, forming a mark of value sometimes in a medico-legal sense. A like defective growth causes the hair to break off by the part which has grown during an illness, when it is supposed to be coming out. So in the whole animal or vegetable organism growth is at all times in accord with the conditions, favourable or otherwise, under which it takes place, and the final result corresponds with the sum of such conditions. Defective nail growth is in time cut off and got rid of, and the hair grows again. It is not so with the brain. Defective growth there means, as in the tree, curtailment of ultimate size, inappreciable by our senses, but having its effect upon the mental powers.

But size, as we know, does not necessarily mean strength, and something more is required than mere growth. Concurrently with growth another process goes on in the young, which we may call functional development. This gives functional vigour and stamina to organs which otherwise, although large, might be feeble and languid in their action. It is essentially a process of youth—spontaneous, continuous, and progressive during the whole preparative stage. Along with growth it determines the ultimate attainable strength of the mature organ. For complete development every day must add its full quota to the growing organ, and anything short of this is so much detracted from the final result. A primary object in true education must thus be to maintain, continuously and in the highest degree possible, the conditions necessary for healthy growth and development. Let us now consider what these conditions are.

First must be placed the maintenance of full health and vigour of the system. The animal body is a typical commonwealth, where



each part performs its own special work in the vital economy, where all work together for the welfare of the whole, and where one cannot suffer without all being more or less affected. Much as it may be our object to pay special attention to the brain, we must not the less, but the more attend to the healthy action of all the organs of the body, without which the brain cannot thrive. A factor of great importance in education is abundance of free and hearty exercise in the open air, without which the system must more or less languish, and growth and development be defective.

Looking now at growth, we must consider it mainly in relation to food supply. Growth may be regarded as the process of building up the animal frame with the plasma derived from the food. But as food cannot be utilized for this or any other purpose until reduced to the condition of chyle, the supply will depend upon the powers of the digestive organs as much as upon available food stuff.

After the maintenance of life and heat, the first demand upon the food taken by old or young is to supply the place of waste consequent upon action. Any failure in this respect entails emaciation, weakness, and disease. In the adult this process of repair, along with combustion and storage of carbonaceous matter, are the only demands upon the food supply. In the young, however, over and above these immediately essential purposes, food is required to provide building material for growth, and the quantity taken requires to be to that extent greater, in proportion to size and activity, than in the adult.

Any deficiency in the food supply, or what amounts to the same thing, any excessive demand for repair consequent upon overaction, must be at the expense, in the first instance, of growth, which, having reference only to the future, is less urgent at the time,—growth must be completely starved before repair and with it health begin to suffer. What is thus true, and frequently observed with regard to the body as a whole, must be equally true of individual parts or organs which may be affected separately. These can only receive their share of the whole nutrient supply, which share, although determined to some extent by relative activity, is a limited quantity. Any excessive demand for repair must be met out of this quantum at the expense of growth and ultimate development of the part. Should nutrition be insufficient to supply even that demand, then, besides entire cessation of growth, the part will be weakened and injured.

The great importance of an adequate food supply for effective education is now being recognised, and steps taken to meet the most pressing needs. Food stands in relation to instruction as the building of a house does to the furnishing of it, and ought, one would think, to be a prior consideration.

It is very possible, however, for children to starve, as regards growth and future physique, in the midst of plenty. If the digestive

powers are weak, an abundance of food is of little avail, and the child of the well-to-do may be in as poor a state as the most poverty-stricken wastral. The maintenance of a hearty appetite and good digestion ought to be looked upon as a first object in education, and all school procedure which tells against this is *anti-educational*.

Functional development depends upon functional activity, which, so far as it tends to development, we may call *exercise*. Beyond that point it becomes STRAIN, and injurious to health. *Duly regulated* exercise is essential to the proper development of every part of the organism, and the ultimate attainable strength of each, in relation to organic structure, is determined by the extent to which it is thus exercised during the whole period of youth. Any part which receives no exercise (as is often the case with the muscles of the scalp and ears) is altogether lost as regards functional power, and all deficiency of exercise entails a corresponding defect in the strength of the part concerned. On the other hand, excessive exercise will produce excessive development at the expense of growth, with present increase of functional power, but ultimate organic weakness. This is seen where, as in mining districts, boys are put to hard labour. As boys these are abnormally strong, and have the appearance rather of little men. Nature, as it were, finding the strain upon the organism incompatible with the continuance at the same time of growth and health, chooses to sacrifice the former so as to save the latter. She thus hurriedly winds up her unfinished work, and adapts the young organism, as best she may, to the adult conditions imposed upon it. In such districts the men are found to be of small stature, poor physique, and short lived. What is thus demonstrated in the case of the body is equally true of the brain and mind. Any part of the mind (and there are many parts) which is insufficiently exercised in youth must be correspondingly weak in after life; while any part which is exercised to excess will be abnormally strong at the time, at the expense of growth and organic stability of the part of the brain from which it is evolved, with ultimate weakness and a tendency to early decay. It is difficult here to illustrate the effect of insufficient exercise, as such defects as would result are usually set down to individual peculiarity; but with all respect to our guests of the teaching profession, I would suggest that the restricted range of mental exercise prescribed by the school, and the comparatively little time or opportunity allowed for any other, must have the effect of narrowing the scope of mental development. The premature development consequent upon excessive mental exercise is witnessed in those young persons who work hard for school prizes and competitive examinations. They want the brightness and animation of youth, and have an abnormally thoughtful, careworn expression of countenance,—are, in short, mentally, *little men and women*. It would not be difficult to instance numerous examples of the further analogy of later years,

when the mind breaks down more or less on the very threshold of its life's work, and is worn out when it ought to be at its strongest. Such cases are probably within the experience of all of you. They are freely cited by most with whom I have had occasion to converse on the subject, more especially in reference to the Indian Civil Service examinations. These are designed to test, not qualification for the work in prospect, but simply the powers of endurance of the candidates. They are no doubt a means of selecting those who are strongest at the time, many of the weaker breaking down under the strain of preparation; but they are also a means, according to inexorable physiological law, of preventing them from being strong in the future.

For the attainment of full power of any part, physical growth and functional development must go hand in hand, each, as it were, waiting upon the other. Exercise, while full, must use up no more than its share of plasma, *leaving the due quantum to be vested in growth for adult use*. To whatever extent this correlation of activities is departed from, so far will ultimate power come short of what it might have been.

We come now to the question of how the educator is to judge of these complex requirements and conditions of healthy growth and development, so that, while seeking to instruct and train the mind, he may secure good brain power to give due effect to his instructions. How is he to regulate brain action, so that it may be at all times in due relation to nutrition and the requirements of growth? Sir Lyon Playfair, on behalf of the authors of "the Code," professes to have gauged the powers of the average child, and thus adapted the requirements of "the Standards;" but he does not condescend upon particulars as to how they arrived at their conclusions. The question, however, is not one of attainment, but of school procedure. It matters little how high the standard at which the teacher may aim, so long as he employs only right methods in seeking to attain to it; whereas with wrong methods much harm may be done, with very poor educational results. It must be evident that age and apparent strength are no adequate or safe guides in this inquiry. Besides the many degrees of mental power as a whole, of which no estimate can be formed from outward appearances and the great variety of bent or speciality of power in different minds, many circumstances modify the determining conditions from hour to hour. Previous action, both mental and bodily, the time of day or night, the state of digestion, emotional feeling, slight ailments, etc., have an important bearing upon the action, suitable at the time, and require to be allowed for in regulating exercise. Then the multiplicity and extreme complexity of the mental powers must be taken into account, and care taken that all receive due consideration. Were the regulation of mental activity left to the arbitrary will of the teacher, what chance would there be of all these conditions and considerations being duly observed? Fortunately there is another educator in

the field, one who has all the knowledge and power which are of necessity wanting in the schoolmaster. After forming a human being in embryo, and bringing it through all its stages to the period of school life, Nature does not retire from the field, and leave the work to be taken up and completed by another. The provisions which have succeeded so far are still in force, and no less efficient for the future.

All our organs are of necessity automatic in their action ; and almost all perform their functions, and look after their own well-being, without our consciousness or our being able to control them in the slightest degree. Only such as have external relations—the stomach, the muscles, and the mental powers—are in any way subject to the will, and these only as regards such relations. With them activity is automatic and self governing as with the others ; and the duty of the will is simply to guide and direct these activities in accordance with external relations. Organic conditions and requirements are intimated to the will, and the rule of the will is dominated by *instinctive feelings* springing directly from the part concerned. These may be classed as desire and pleasure, prompting to, and discriminating action, on the one hand ; and repugnance, satiety, fatigue, and pain, preventing or checking excessive or otherwise injurious action on the other. These instinctive feelings are a *perfect* index to organic and functional conditions and requirements at all times and under all circumstances. They are a necessary equipment of the animal organism, and throughout the whole animal kingdom are thoroughly effective in securing required conditions of life, however various or complex these may be.

In the young instinctive promptings are modified in accordance with the educational system designed and instituted by the Great Teacher, having reference not only to present health and well-being, but also to *preparation for the coming life*. They thus indicate not only the amount of food required to meet the immediate requirements of vitality and repair and actual power according to available nutrient supply, but also the additional nutriment required for growth and the relative proportion in which plasma ought to be applied to repair and growth. It is to them that I would direct the teacher for guidance in the otherwise impossible task of properly regulating activity in the young. In any case he must lay his account to deal with them, as they are there, and cannot be got rid of. They are as much a part of the child as are his limbs or his senses. They are there, however, for a purpose, which is the same as that which the teacher is understood to have in view, apart from examinations. Like the law of gravitation, they are either a help or a hindrance, according as they are with or against us. Activity as prompted and regulated by instinct needs only to be aided and directed in order to produce the highest results. The teacher may substitute his will for that of



the child in directing activity, but in doing so he must follow the indications afforded by the child's feelings since his own do not apply.

I need say nothing in support of this view as regards the body, since the complete efficacy of these natural guides is amply demonstrated wherever the young are, under favourable conditions, left to follow the dictates of Nature. In a general way it is acted upon in the management of children, so far as the supposed requirements of mental education will allow. We may then assume as granted, that in the taking of food and bodily exercise the *inclinations* of the child, as prompted by instinct, are the best or only guide. Let us see how the analogy bears in regard to the mind.

We have first to note that mental activity is there in full volume. Prominent as is action of the body, that of the mind is even more constantly present in the waking hours of the child. It is an essential element in all games and amusements, whether or no these be accompanied by bodily exercise, and it is manifest in every word and act. It wells out as water from a spring, and like a stream, while impatient under restraint, it readily turns into channels which favour its natural flow. In any case the teacher has it to reckon with. If it be not with him it will be against him, and, for good or ill, it is an ever present and effective force.

When we analyse this activity, we find that it is of two kinds, viz. :—1st, The acquisition of knowledge and ideas as evidenced by keen observation, prying curiosity and frequent questioning, along with the immense store of knowledge of common things, which is amassed without the aid, and notwithstanding the monopolising tendency of the school; and, 2nd, exercise of such knowledge as is possessed in play and amusement. Each is prompted by instinctive impulse directly connected with organic conditions, entirely analogous to those prompting the taking of food and bodily exercise. Analogous, too, are the objects sought to be attained, viz. :—Furnishing the mind with the pabulum that thought is made of, and without which there can be no mind; and securing for this the exercise and training required to render it efficient in the future. Is there any reason for withholding from mental activity, so prompted, the confidence we are so ready to place in analogous bodily activity? Do we know so much more of the psychical action of the brain than we do of the action of the stomach and of the muscles, that we can afford to dispense with or oppose natural indications in the one case, although we, admittedly, cannot in the other? Are not the facts very much the other way? And is it not because we know so little that we presume so much?

Let us look at the two forms of mental activity so prominent in the child, and see how far they may meet the objects of education.

The child craves for knowledge not less ardently than he does for food; and, of his own free will and pleasure, imbibes all the information to be obtained from the every-day life of the community in which he lives; besides acquiring a fair command of at

least one, sometimes two or three languages. No one who compares the knowledge and intelligence of a child six years of age with those of the same child at one or two can doubt the exceeding vigour and efficacy of this receptive mental activity, or dispute the existence of a natural desire or appetite for information. The question is whether this appetite is sufficient for the purpose of the teacher? What is this purpose? To supply the young mind with knowledge of a kind which without his aid the child would have no opportunity of learning. Very good! And how does he propose to get the child to accept of it? What difficulty, when the appetite is there ready to imbibe any suitable pabulum which may be placed before it? But the teacher may tell us that he does not find this appetite incline the child to learn grammar rules, Latin exercises, and other articles of conventional school diet. This, however, reflects upon the form of the rules, etc., rather than on the appetite. The appetite for food does not incline the child to eat raw potatoes, but we do not on that account employ means to force raw potatoes upon him, however nutritious they may be considered. We boil the potato, and do it up in some palatable form, when it is eaten readily and with pleasure. So ought the teacher to present his grammar rules and all other pabulum with which he seeks to feed the child's mind in such form as will engage the interest, when it will be learned with pleasure. With regard to this, I would say that the printed word can never be the best form in which to present knowledge to the child's mind, being as yet unfamiliar, and requiring a distracting effort of mind to follow the meaning. The spoken word, which has been familiar from infancy, and goes direct to the mind, should always be used, and supplemented, as far as possible, by pictorial aids. It is as reasonable to suppose that digestion is improved by giving indigestible food as that the mind is strengthened by rendering learning difficult.

But as even boiled potatoes may be unsuited to the infant stomach, so there may be mental pabulum which no amount of cooking will render intelligible, and therefore interesting, to the young mind. The only sensible way to deal with such is to leave it till the mind is sufficiently advanced to receive it with interest. To force it earlier upon the memory is both useless and injurious. Again, the utmost efforts of the teacher will fail to keep up the interest of his pupils for hours together, just as it would be impossible to keep up the appetite for food with a like continuous feeding. The receptive powers in either case are limited, and the only possible indication in this respect is the appetite. But the teacher may tell us that this appetite is not nearly sufficient for his purpose, and that the child requires to learn much more than he is inclined for. So might one say with an arbitrary method of feeding, which prescribed food upon some empirical rule, without reference to taste or appetite. We know that the result of such feeding would be to injure the stomach and *starve* the child.

So it is with a like method when applied to the mind. Far less knowledge is really imparted with this empirical stuffing than might be with teaching conducted upon strictly natural lines.

Those who reject the appetite as a guide to instruction ought to be able to state what other indications they profess to follow. Or will they tell us, in so many words, that they require no indications other than their own arbitrary estimate of what the child ought to be able to learn, and which they can force him to learn? Is the implanting of knowledge in the human brain such a simple affair that it can be dealt with in this rough and ready, this brutal fashion? Such a statement would, in the light of physiology, carry with it its own condemnation, and the condemnation also of those who made it as unfit to be entrusted with the management of the growing human mind.

The acquisition of knowledge is but a part, and by far the smaller part, of spontaneous mental activity in the young; the other part, which embraces all their play and amusements, being exercise of the knowledge already possessed.

The idea, or item of knowledge, when implanted in the mind, seems to exert a modifying effect upon certain of the brain cells, which thereupon assume the nature and character of an organ having the evolution of the said idea as its function. This I look upon as the *psychical unit*, the aggregate of such ideas, acting together, and manipulated, so to speak, by the mental faculties, constituting our intellectual powers. Each idea is thus organic, and subject to organic laws. It requires exercise for development, and to keep it strong and vigorous; but this must be duly regulated in accordance with organic conditions at all times. Such exercise is prompted by instinctive impulse, and accompanied by feelings of pleasure, just as with the muscles. Hence the perpetual mental activity of the older child. In the young child where ideas are as yet few, this spontaneous exercise is the more easily studied. It is then seen that, while anything appealing to existing ideas, as the shaking of a rattle or the springing open of a watch, excites pleasure for a time, the child soon tires of it, and the same amusement will not be again effective till after a period of rest. Great part of the young child's time is spent in sleep or in mental apathy, there not being ideas sufficient to fill up the whole day. In the older child, again, ideas have become so numerous that they cannot all find time for the exercise they would willingly take, and it becomes, to some extent, a matter of selection and survival of the fittest. Still, the exercise of each, however it may come short of, must never exceed that suited to its organic condition at the time, otherwise the organism will be injured and weakened for the future. This regulation of activity is amply provided for by inclination, just as with the individual muscles; and as with the muscles, so with the ideas and mental powers, the tendency is to full development of the whole. The office of the teacher in this respect is to aid and direct activity into the most useful channels,



on the principle that the parts of the mind most exercised in this way will be strongest in the future.

You may have observed the absence in this paper of all reference to the subject of memory, which, as a rule, bulks so largely in school work. The reason is that I do not look upon memory as, properly speaking, part of the mind, but mainly a record of sense perceptions, having only an incidental connexion with our thinking powers. I was sorely tempted as I wrote to bring in my views on this subject; but having regard to your time and patience, I thought it better to deal with memory as I think it ought, in the main, to be dealt with in education—leaving it out altogether. I could, of course, give reasons for this, but shall spare you for the present.

I have endeavoured in the time at my disposal to put before you what I take to be the basis of the true science of education—the natural process of preparing the young mind for the coming life. I am convinced that in the careful study and strict observance of this lies a great future for the teaching profession, as well as a happier and a better time for children and for the nation.

The attitude which, I think, ought to be taken up by the medical profession in the matter is to insist upon the total inadmissibility of punishment and prizes as applied to mental work in the young. The only object of such, as it is their only effect, is to overcome instinctive promptings—to induce the child to do what Nature tells him is wrong. There can be no safety in any system of which they form a part, any more than if the same were applied to the taking of food. Deprived of this means of forcing unsuitable, and therefore repugnant, because injurious work, upon his pupils, the teacher would be obliged to fall back upon the natural action of the young mind and adapt his method to that, when a beginning would be made in scientific teaching. Then, and not till then, will payment by results be a safe and justifiable measure. As at present applied, the teachers themselves cry out against the iniquity of the system, declaring that it necessitates on the approach of inspection time an injurious amount of pressure upon the more backward pupils; and I know well, from personal observation, how much this is the case. So long as this is understood to mean only a little temporary suffering, or even illness, with compensating benefit from increased knowledge, it is not likely that even the Society for the Prevention of Cruelty to Children will concern themselves in the matter. But if it were distinctly stated and pressed upon the authorities by the medical profession that such pressure, and all pressure upon the delicate organism of the growing brain, is directly opposed to the objects of education, and certain to weaken the intellectual powers of the rising generation, then it might be hoped that something would be done to place the school system on a more safe and satisfactory footing.

*Dr Clouston* said it might be useful to lay down general principles in regard to education that would be accepted by both physio-



logists and by educationalists, and then in the application of these to try and find out their differences, if they had any. Was not education the guiding of the process of development? Would not the physiologists and the educationalists both agree that this was a reasonable definition of it? If so, would they not both agree, too, that this guiding process must be conducted with reference to certain leading and essential principles? The chief of these seemed to him to be:—*First*, It must be conducted with reference to the potential power of each organ of body and each faculty of mind of each individual to be educated. This potential power could not be estimated except by taking into account the heredity as well as the things that can be directly tested by observing children. They all knew that every fond mother and every ambitious father firmly believed that their son was capable of doing anything in any direction if only they could get a schoolmaster clever enough to understand him and train him rightly. The parents far more than the teachers failed to estimate the true potentialities of children and their limitation of power in all directions. But the teachers must make an attempt to please their paymasters. The parents might know, but wont, and the teachers had not the means of knowing the weak parts in heredity and constitution of the pupils. *Second*, It was essential that the educational process should have reference to the chief work to be done in life by the person to be educated. Was this to be handicraft, or commercial or professional duty? To apply the same process for all these would be ridiculous. *Third*, It must have reference to the two great and primary instincts of preserving life and of reproducing life. It must not hurt the health, and it must not lessen or render specially difficult or dangerous the process of reproduction; nay, it must not diminish the desire to reproduce. This applies most strongly to the female sex. They must on no account sanction any educative process that produces bad mothers. The future of the race depended on this. Their efforts should be to make our women intelligent and useful members of society, as well as capable progenitors of future generations. Motherhood should be the highest delight of every healthy woman, and anything that lessens that delight must be contrary to Nature's law. He believed the two things were perfectly compatible. But to make them so the teacher must come to the physiologist and the doctor for guidance in his principles and in his practice in female education. *Fourth*, The educative process must have reference to the happiness and the capacity for enjoyment of the individual to be educated. And this could not be dissociated from his health. He could not quite go so far as Dr Strachan in advocating a purely natural process of education. He believed in the teachings of experience, and surely schoolmastering had not been conducted on entirely false lines for thirty centuries. What it needed was to get itself tempered by the physiological knowledge of the present day. It was doing so in many ways.

Look at the systematic games, the shortened hours at a stretch, the airy class-rooms, the diminished floggings, the more careful study of individual capacity and peculiarity, that they would find in every good school and increasingly prevalent; look at the special arrangements for studying classics, science, and commerce; look at the means of cultivating observation—the school museums and the botanical excursions; look at the school cadet corps—all these things showed progress on rational lines. But this progress had been more for the boys than the girls. Let them insist, so far as they could, that the girls get the full benefit of the same advanced ideas. They needed them even more than the boys. Unfortunately women in advocating women's rights had not always put in the forefront of their claims the primary right of the sex to the capacity for easy, safe, and pleasureable motherhood. Let them not neglect this in the future. It lay at the root of every woman's happiness, and must do so to all time. He was not afraid of educational pressure, but it must be pressure applied and guided by knowledge. They did not fear the engineer raising his pressure to 120 pounds per square inch when his boiler had been tested to over 200. Till they were a little nearer the millennium they would not get their boys or their girls either educated even up to their safe capacity without applying some pressure. They must remember that part of the educative process was to increase inhibition—the controlling power in all directions; and to do this they must teach their boys and girls to do disagreeable things because they are their duty. One of the highest things in education is surely to strengthen self-control and to intensify the sense of duty. But they could do that without hurting the health or taking all the sweetness and light out of life.

*Dr Berry Hart* said the great problem in education at present was how to give the utmost amount of education without doing harm,—the maximum amount of education and the minimum of harm. The error committed in many schools was that there was too much of the mental education, and far too little attention paid to the physical training of the children. That had become much worse in Edinburgh of late. The amount of time devoted to play was ridiculously small. In some large schools half an hour was allowed, and in some girls' schools there was no physical training at all to from six to eight hours study. As a result of over-education he had noticed anæmia and hysteria occurring among girls as well as chorea. That to certain of the girls was the most serious thing of all, as it might develop into something exceedingly bad in after life.

*Dr W. W. Ireland* said that *Dr Strachan's* views on education seemed to have been written for an ideal society. As the world was at present constituted, it was impossible to teach children only what was pleasant to them, or even what was best for the cultivation of their minds. Take one case, the English language was spelt in a most absurd and antiphonetic manner, which made

it very difficult to learn. He did not think it wonderful that children should object to learn it, but learn it they must. A bad speller could never get on at any examination, and those who did not learn spelling when young never seemed to learn it during the rest of their lives. He did not think society was conducted on the best possible principles, but as it stood it was impossible to make the maintenance of the highest growth in the child the prime and only object, any more than to make the highest health in the adult their exclusive aim. When health was in danger of being lost they were called in as counsellors, when it was their duty to save health and life. The fact is, the children of the country were all engaged in a race of competition. It was all very well to say that those who were in the front were running too fast—very likely they were, but those who fell behind were in much danger of losing rank which they could never regain. He did not believe that boys were fit judges of what they ought to learn, or that their natural inclination and tastes would lead them to learn what would be most useful to them when they grew up. He did not even think that the physical education of boys could be left entirely to themselves. Active and stirring boys might get on without enforced gymnastic training, but it was a great advantage to dull and sluggish boys. He believed that during the last twenty years much greater attention had been paid to physical training. He did not think in ordinary education we could dispense with the stimulus given by the fear of punishment and disgrace and the hope of reward.

*Dr Ferguson* returned thanks to the Society, thanks in which he said all teachers would join, for the opportunity of hearing the paper and discussion. Teachers might be inclined to accentuate the spiritual aspect of their pupils more than their physical requirements, and a discussion such as they had listened to, by experts in the physiological aspect of education, could not fail to do good. The question of over-work was one which concerned the whole community as well as teachers. Certain attainments were required by the Civil Service Commissioners, professors in universities, and by all who directed or tested education, and these teachers were called on to impart. If pressure was needed to attain such, the taskmasters as well as the workers must review the whole. Teachers found they had enough to do to carry out the programme handed to them, and only the teacher who instinctively understood his pupils physiologically as well as mentally could hope for success. The love of knowledge was, as *Dr Strachan* had said, natural to a child, but concentration and discipline, the characteristics of civilized man, were not, and these formed the special work of teaching. In his (*Dr Ferguson's*) experience in a secondary boys' school the evil effects of over-work had not been much felt. In fact the boys that did most, and who should show the evils of pressure if it existed, were generally the healthiest.

*Mr R. J. Mackenzie* (*Edin. Acad.*) said that in his opinion the



day schools did not take sufficient account of physical education. When the school-room door was shut, most day-school masters considered that their responsibility for the boys was over. Yet many parents did not value physical education, and those who did were often unable to make proper provision for it. This should be the work of the school. He was not prepared with any cut and dried plan, but unless the day school made proper provision for physical education, in many cases such provision would not be made.

*Mr Starkey* (Collegiate School) said he had been struck by the advantages of the English public schools over the Scottish day-schools in the matter of physical education. With a re-arrangement of hours something might be done towards the physical development of the pupils, but without the help of the parents he was afraid it would be little. The doctors, however, who had the ear of the parents, might help them very much in the matter.

*Mr J. R. McLaren* (Great King Street) said the great difficulty which teachers had at the present time was, that owing to the amount of work entailed upon them by the examinations for which they had to prepare their pupils, no time was left for the development of the faculties and powers of the pupils.

*Dr Rogerson* (Merchiston Castle) asked the medical men to support the teachers in the matter of the physical development of their pupils by encouraging parents to allow their children to take part in school games. He did not mean a certain amount of exercise simply, but social games, for he thought the social friction of school games had advantages which a mere training in athletics—though he did not undervalue that—did not possess. He regarded the advancement which had been made in the direction of making education take in the whole sweep of a boy's powers, both bodily and mental, as enormous, and this he considered was one of the great secrets of the success of education at the present day. He expressed satisfaction at the change which it was proposed to make in the manner of allocating educational grants, holding that the one great drawback in the present system of education at the Board schools was that boys were simply pressed forward as rapidly as possible with the view of getting them through the Standards and securing the money grants.

*Professor Chiene* highly approved of physical exercise, and pointed out that it was of importance that schoolmasters in asking parents to allow their sons to play football should see that their scholars play only against those of their own size. Accidents occurred to those who were opposed to people stronger and heavier. Examinations and their stringency depended simply on the large number of those desirous to enter the professions. Any cause which lowered the number of applicants would at once lessen the examination-pressure.

*Dr James Carmichael*, in making some observations from the



point of view of a medical practitioner, said he cordially agreed with the remarks of Dr Clouston in his special reference to the all-important subject of the education of girls, and it was to this he wished particularly to allude. On the general question he presumed they were met together as scientific men and education-  
alists to arrive at the truth, and to conclude as to the practical bearings of the present system of education on the health of their children, specially as regards the question of over-pressure. For any evils in the present system he thought the teachers were less to blame—if, indeed, they could justly be held responsible—than the general public. The teachers were merely the vendors, so to speak, of the articles which parents demanded. He thought in recent years there had been a great improvement in boys' schools, particularly in regard to the physical education and prolongation of play hours. The general tendency in this direction he thought highly commendable. As a result of his experience in practice, he had rarely found that over-pressure applied to boys. It was in girls that the evil effects of the present system of education were manifest. The tendency in the present day, he might say the fashion, was to educate girls on the same lines as boys. They were taught the same subjects in order to fit them to appear on the same platform as men, and compete with them in every walk of life. In his opinion this system was attended with the most disastrous results as regards the health of women. A large proportion of girls suffered, as medical men knew, when at school; but unfortunately, perhaps in the majority of cases, the evil effect of this system of over-pressure did not manifest itself immediately, but only became evident in later years, when as women they were called upon to discharge maternal duties. They had the strain of child-bearing and rearing of infants to bear, and were they found equal to the occasion? He feared the answer of the profession must be in the negative. In girls who were so highly educated and over-strained as to their intellectual functions, the bodily health suffered in a large proportion of cases. The children born might be, and often were, delicate, and comparatively few of the mothers were able to suckle their babies through the whole of the natural period of lactation. The effect of this was decidedly unfavourable to the health of the infant, and a very serious evil to the community. How was the evil to be met? By an intelligent appreciation on the part of the parents and teachers of the physiological limit of endurance of mental work in girls, beyond which it was dangerous to go without endangering their physical health. He quite agreed with the remark of several of the teachers that it was only by co-operation with the medical profession on the part of parents and teachers that successful results could be attained. Medical men were justly proud of their relations as confidants and advisers in the family on many matters besides the actual treatment of disease. Let the parents take their medical advisers into their confidence regarding the education of

their children, particularly their girls. Let the doctor be, as he ought, the health officer of the family, not only treating the ailments of various members as occasion might arise, but advising them in all matters concerning the education of their children in health.

*Dr P. A. Young* cordially agreed with the views expressed by Mr Mackenzie and Mr Rogerson as to carrying on the physical and mental education of children side by side. And after all that was the method advocated in ancient Greece, where it perhaps reached its highest development. In modern days the nation which was perhaps the most cultured in Europe—Germany—had shown no deterioration physically, if they might judge by their prowess on the field of battle. He was at one with Mr Mackenzie in thinking that in boarding-schools the combining physical with mental training could be best attended to; but he thought in day-schools they might adopt, to a certain extent, the methods employed in boarding-schools. This end might be so far attained by adapting the hours of instruction to the season of the year. Thus in winter, by beginning school at 8 o'clock in the morning, the children could be dismissed at say 1 o'clock, when after dinner they might have time for exercise during daylight. In summer, by playing for an hour in the morning, being in school during the heat of the day, and playing in the evening. He had found in his experience that children broke down because they ate a hasty and often insufficient breakfast, hurry off to school, and when hungry in the middle of the day having an indigestible lunch, they came home tired in the afternoon, unable to eat dinner; and if they did eat it, were unable to digest it. The remedy for this was to have dinner in the middle of the day, as had been done in the Edinburgh Academy. By attending to such points as he had mentioned, he thought they might best secure "the sound mind in the sound body."

*Dr J. M. Cotterill* said that while Dr Strachan's proposition had been very severely criticised, he could not help thinking that there was a germ of truth in it, namely, that the individual capacity of each child for particular lines of study should be carefully noted, and that he should not be unduly pressed into channels of work which were manifestly contrary to the bent of his mind. With regard to what had been said about the necessity of football and other games, Dr Cotterill deprecated the easy way in which some medical practitioners were apt to give countenance to requests made on insufficient grounds that boys should be prevented from taking part in violent exercise.

*The President*, before calling on Dr Strachan for his reply, offered the thanks of the Society to the eminent teachers who had enlivened the meeting with their presence, and especially to Dr Ferguson and others who had enlightened it with their observations. As the hour was late, he would do no more than to enforce the necessity insisted on by Dr P. A. Young of making due provision at all their day-schools for proper feeding of the children about mid-day. It

was of the utmost importance that they should not be allowed to go on working from 8 to 3 o'clock without having a good square meal some time between these hours. As regards physical training in connexion with their public day-schools, he believed great advantage would accrue to the children if they were made to pass through a regular daily drill in a well-ventilated gymnasium after their class-work for the day was over. In Amherst College, Massachusetts, all the students were obliged to attend such a drill in a gymnasium gifted some years ago to the institution by an old alumnus. The effect on the health of the students had been very remarkable. They had statistics to show that whereas formerly the morbidity and mortality increased with each successive year during the four years of study, the health conditions had been completely reversed since the gymnasium was opened, the sickness and the death-rate diminished in each successive session, and the fourth year's men were now found to be more vigorous than the freshmen who had just come up to college. There could not well be any subject more worthy of discussion than the successful upbringing of our children. The young of a nation were its most valuable possession, worth more than all its bank reserves, its ironclads, and armed regiments.

*Dr Strachan* thought it was unnecessary for him to take up the time of the meeting with any lengthened reply, as the discussion had drifted away from the subject of his paper, and gone into details which it was impossible for him to take up. *Dr Ireland* questioned whether the subject was a proper one for this Society, which, he said, had to do with pathology rather than physiology; but the medical profession had never confined itself to dealing merely with morbid conditions. The removal of the causes of illness—as in sanitary matters—had long been an object with their profession, and he thought might well be so with this Society. It was with this view that he had ventured to bring this subject before them. It was of little use their pointing out this evil, and that as being caused by school-work, unless they could at the same time indicate on what principles they could be guarded against. His object had been to lay down the principles upon which education should be conducted, and by which they might be able to judge when school procedure was tending to evil before the evil showed itself. Reference had been made to the connexion between what was called higher education and injury to certain functions; but he denied that this could ever be the case with true education, which was a perfectly natural process, consistent with the full development of all the functions. He held that so long as education was conducted upon right lines, health could never suffer in consequence of it. Great evils in connexion with school-work were fully acknowledged, and it was quite time for the medical profession to come to the front with some sort of guidance as to how they might be avoided.

## OBSTETRICAL SOCIETY OF EDINBURGH.

## SESSION LI.—MEETING VII.

14th May 1890.—Dr BERRY HART, *President, in the Chair.*

I. *Dr James Carmichael* exhibited APPARATUS FOR THE STERILISATION OF MILK, and described the methods of Soxhlet and Roch, and also the steriliser of Arnold. He remarked that one of the greatest improvements of recent years in the treatment of cow's milk in the artificial feeding of infants was sterilisation. It had been noticed as a curious fact that formerly, and previous to the introduction of this method, hand-fed infants were the only individuals who were reared on unsterilised food, that of older children and adults being invariably cooked. The profession, having now become alive to this fact, are generally agreed as to the necessity of cooking milk as well as other foods. It is perhaps hardly necessary to allude to the fact, that under normal conditions the infant receives from the mother's breast a perfectly aseptic fluid so far as any injurious or pathogenous organisms are concerned. It is therefore incumbent on us, in our endeavour to follow Nature as closely as possible, to see that the cow's milk is rendered aseptic—and this can be done with very little care and trouble. The investigations of all the leading bacteriologists, such as Pasteur, Lister, Loeffler, Hueppe, and others, have shown that cow's milk is one of the best pabula for the development of micro-organisms. Escherich has shown in his essay on the "Pediatries of the Naturforscherversammlung" that within a few hours of milking there are over a million of germs in the milk. The absolute necessity, nay, the culpability of the neglect of complete sterilisation of cow's milk before administration must be admitted. The practice is in general use on the Continent and America, yet it can hardly be said to have been introduced in Great Britain. No doubt we have hitherto in this country been in the habit of recommending milk to be boiled in an ordinary open pan, but this is quite useless so far as efficient sterilisation is concerned. The apparatus now in use, such as has been exhibited to the Society, is the most efficient and ready one at present at our disposal, yet by their means complete sterilisation is not effected, for according to Pasteur and Lister a temperature of  $266^{\circ}$  is required to effect thorough sterilisation of the milk, and to destroy the spores as well as the micro-organisms themselves. Nevertheless it is believed that the methods now in use are sufficient for practical purposes to render the milk innocuous. Milk sterilised in Soxhlet's apparatus for forty-five minutes will keep for three days; if boiled for one and a-half hours, it will keep six weeks. At the temperature of boiling water or steam, it is admitted that most if not all the organisms are destroyed, leaving the spores, and it is found in practice that the milk so treated is wholesome and safe for administration. The results



obtained, both on the Continent and in America, have been most satisfactory, and a large reduction in infantile mortality under bottle feeding has been effected. It cannot be doubted that before long the practice of efficient sterilisation of milk, whether for bottle babies or household use, will become general in this country, and it is with the view of pressing this matter on the profession that I have ventured to bring it before the Society to night.

II. *Dr J. D. Williams* showed a series of SIX COLOURED CASTS, prepared with glycerine and gelatine, demonstrating the following pathological conditions of the pelvic organs:—1. Primary cancerous disease of both ovaries. The Fallopian tubes were unaffected. A cancerous nodule was situated between the fundus uteri and the fundus vesicæ. The utero-vesical pouch was obliterated, the bladder and uterine walls being firmly adherent. 2. Simple non-parovarian cyst of the left broad ligament with deformity and asymmetry of the uterus. 3. Hæmorrhagic cyst of the left ovary with displacement of the fimbriated extremity of the right Fallopian tube. 4. Uterus at the third month of gestation, showing retained and morbidly adherent placenta after abortion; putrefaction; septic absorption; fatal septic peritonitis. 5. Bi-lateral hydrosalpinx. The tumour on the right side, which was of the size of an infant's head, was four times as large as the left. 6. Bi-lateral hydrosalpinx (No. 5) with the pelvic organs *in situ*, showing adhesions passing from the tumours to the uterus, rectum, and pelvic walls.

III. *Dr J. D. Williams* read his paper on the CO-EXISTENCE OF HEART DISEASE AND PELVIC LESIONS, which will appear in a future number of this Journal.

*Professor Simpson* thought the Society was to be congratulated on the first appearance of *Dr Williams* as a contributor to its Transactions. It was a very meritorious attempt he had made to bring into view the relation between cardiac and pelvic lesions as seen in the post-mortem theatre. *Dr Williams* had refrained from drawing deductions from his statistics; but it was important to have such statistics recorded and multiplied, and the conclusions to be derived from them would gradually become more clear. Most of the members of the Society had opportunities of studying this subject in its clinical aspect. Such observations, however, as *Dr Williams* had brought before them could only be made by one devoting his time to the subject, and so far as could be gathered from listening to his paper, the anatomical results confirmed what was to be expected from clinical study,—such, for example, as that endo-cervicitis and other congestive processes should be the most frequent concomitants of cardiac disease. It would add to the value of *Dr Williams'* paper if he would introduce some notice of the relative frequency of cardiac affections as observed in other conditions, such as might be found in works on heart disease; and

again if he would make a note as to whether the patients were married or unmarried. For there were various circumstances that required to be kept in view before conclusions could be drawn from the data given—endo-cervicitis being more frequent already in the married than in the unmarried. He (Prof. Simpson) hoped Dr Williams would yet add other valuable material to the Society's Transactions.

*Dr James Carmichael* thought that the material collected by Dr Williams was of great value, and ought to be useful in making deductions as to the true relation between pelvic and cardiac disease. He had not gathered from Dr Williams' paper that any reference had been made or details given of the clinical history of the cases, particularly which was the primary or antecedent disease, whether pelvic disease had any influence in predisposing to cardiac disease in the same way as kidney disease, for instance. A further elaboration of the paper by more particular reference to clinical detail would, he thought, be desirable.

*Dr Barbour* thought the paper was of special value as the first effort to work up systematically the pathological material from diseases of the female pelvic organs in the Edinburgh Infirmary. Hitherto this had been too much neglected, and Dr Williams' careful record of the pathological conditions in the pelvis was significant as a first step in the right direction, and the facts recorded were of the greatest value apart from the deductions which might be made from them. The gelatine casts of the pelvis were a new feature in gynæcology, and especially useful for teaching purposes, as they gave a very good idea of the morbid appearances and relations. The preparation of such casts involved an amount of work and attention to small details which only those who had time to make them could appreciate. As to the results of the inquiry, the relation of mitral and aortic diseases in the sexes was striking, and he would like to know if it was borne out by the statistics of others. As to the frequency of heart lesions in relation to the various forms of pelvic disease, it would be necessary first to have a table of the relative frequency of the various affections apart from heart disease; for example, cervical catarrh was perhaps the most frequent lesion altogether independent of heart disease. At the same time, the great frequency of inflammatory conditions generally was noteworthy; and it was very important to trace out the connexion between local lesions and more general conditions, as we are apt to attend too much to the former.

*Dr J. W. Ballantyne* said that he had had the advantage of watching the gradual evolution of the paper, to which he felt sure they had all listened with much interest, and he could say that Dr Williams had commenced his observations with no preconceived ideas as to the frequent co-existence of heart disease and pelvic lesions demonstrated by the data which had been to-night laid before the Society. The frequent association of endo-cervicitis and

heart disease was a most noteworthy fact, which Dr Williams had elicited by his statistical researches. Dr Ballantyne also thought the Society was indebted to Dr Williams for the demonstration of the relations of the pelvic organs given in the casts, and he could bear witness to the great expenditure of time and labour which the making of these casts involved.

*The President* congratulated Dr Williams on his valuable paper, which represented a great deal of work. He agreed with Dr J. Carmichael that clinical details would have helped to clear up matters. One required to know the blood and renal conditions in such cases, keeping in mind, for instance, the connexion that had been established between albuminuria and placental infarcts.

*Dr Williams* thanked the Society for the kind way in which they had received his paper. With regard to the criticism made by Dr Carmichael, he wished to state that it was an extremely difficult matter to get clinical information of all the cases admitted into the Royal Infirmary, a good number of them being admitted in a comatose and moribund condition; but in each case a vigorous endeavour was made to get as much clinical history as possible. In reference to the question as to whether the cardiac or pelvic disease were the primary, he thought there was distinct evidence in two of the cases that the cardiac lesion had preceded the pelvic.

IV. *Dr D. Berry Hart* (the President) read his paper entitled, IS OPERATION FOR RUPTURED UTERUS FEASIBLE? which appears at page 35 of this Journal.

*Prof. Simpson* thought the Society was indebted to the President for the record of this rare case, and his *résumé* of the different methods of treatment that could be followed. He spoke of it as a rare case, for happily this complication was very seldom met with in Edinburgh. He (Prof. Simpson) could not recall a case for the last twenty years, and the meaning of that was that the obstetricians of Edinburgh took good care of their patients, for in most instances rupture of the uterus was the result of a mis-managed labour. In the only two cases he had seen laparotomy was performed, and the infants extracted through the abdominal wound. Both of the patients died, but even yet he was doubtful if removal of the uterus would have contributed to recovery. No rule for treatment could be laid down that was applicable to every case, for the condition of the patients and the amount of damage to the uterus varied in different instances, and these would modify our impression as to what was best to be done in any individual case. On the whole, he regarded the suggestions of Dr Hart as correct, although it might not be necessary so frequently to amputate the uterus as he had indicated. In cases, for instance, where there was no further hæmorrhage it might be uncalled for.

*Dr Barbour* wished to draw attention to one remark in Dr

Hart's very valuable paper, lest there should be any misapprehension. He had recommended that in all cases in which the fœtus had escaped into the peritoneal cavity abdominal section should be performed at once. In Dr Hart's own case it had been done only after an attempt had been made to deliver the child by the natural passages through the rent, and because this attempt failed owing to the intestines coming through the rent. Dr Barbour thought that delivery through the rent should always be attempted in the first instance, because this had given so much better results in the hands of some obstetricians than abdominal section. When attending the late Professor Schroeder's clinique in Berlin, he had been greatly impressed by Professor Schroeder's experiences in such cases. The first cases in which abdominal section had been done, with the most careful precautions, had all died, so that when the next presented itself, he was so disgusted with the results of section that he just pulled the child out through the rent and stuck in a drainage-tube. To his surprise the patient recovered, and this led him to do the same in subsequent cases, and with a like good result. Of course, in cases of dangerous hæmorrhage or a very extensive tear, it might be evident from the first that abdominal section was the only treatment—each case must be judged on its own merits. But he thought that it was a mistake to regard it as the certain treatment for such cases.

*The President* thanked the Fellows for the discussion on his paper. Every case must be treated on its own merits, and cases of rupture varied very much. He did not favour delivery through the rent: laparotomy he thought better, as in such cases one could cleanse the peritoneum. He had several times used Carl Braun's blunt hook for decapitation, and had been struck with its efficiency. The iodoform tampon seemed a strange method of treatment, but the results had been good, and when one remembered that it gave rest, drainage, and arrest of bleeding, its success was explained.

V. THE REPORT OF THE ROYAL MATERNITY HOSPITAL FOR THE QUARTER ENDING 31ST JANUARY 1890, by *Drs W. Fordyce* and *James Lackie*, was presented, which will appear in a future number of this Journal.

## Part Fourth.

### PERISCOPE.

#### MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

PICRIC ACID IN THE TREATMENT OF SKIN DISEASES.—M. Cavelli (*Gazette Médicale de Paris*, November 16, 1889) claims that picric acid is a remedy of great efficacy in the treatment of various skin affections



characterized by cutaneous inflammation. Thus, he claims that in the course of an epidemic of erysipelas he has obtained the best results by the external use of picric acid; so, also, in the case of lymphangitis, occurring in a gouty subject, as a complication of caries and necrosis of the phalanges of the toes, the local application of picric acid very rapidly reduced inflammation and pain. Similar effects were also obtained through the use of this remedy in a large number of cases of eczema and erythema. As regards the mode of action of picric acid, the author suggests that in penetrating the cells of the corneal layer, picric acid forms a protective layer in the skin, and that in virtue of its astringent action it affords a protection to the Malpighian layer, so leading to a reduction of the inflammation. While, finally, he thinks that perhaps through entering into the lymphatic vessels picric acid may exert an anti-parasitic action. He employs a solution in water,—of  $1\frac{1}{2}$  parts of picric acid to 250 parts of distilled water,—applied externally five or ten times daily.—*Therapeutic Gazette*, February 1890.

THE THERAPEUTIC VALUE OF SENNA-PODS.—The paper of Dr Macfarlane's as to the therapeutic action of senna-pods, which was alluded to in a previous number of the *Gazette*, has called forth an article upon the properties of senna-pods by E. F. Salmon, who has published it in the *Pharmaceutical Journal and Transactions*, October 12, 1889. Mr Salmon has found that the senna-pods are richer in cathartin, the active principle of senna, and which is a combination of cathartic and phosphoric acids with a magnesium and calcium base, while in addition to cathartin there is found in the leaves a volatile oil which is absent in the pods. It is therefore on this account that the pods are free from nauseous taste, and are less likely than the leaves to cause griping pains. Treatment with alcohol removes the resinous and odorous principles to which the griping and nauseous taste are due, and will leave the cathartin unchanged. Cold water, on the other hand, readily dissolves the cathartin from the pod, while the cathartin from the leaf, owing to the impervious nature of its epidermis, is insoluble in cold water. Accordingly, Mr Salmon recommends cold water as the best menstruum for the preparation of a fluid extract. The first maceration should be for twenty-four hours; for the second, twelve is sufficient. For one pound of pods six pints of cold distilled water for the first, and about three pints for the second maceration is a sufficient quantity to use. The liquors were strained off to be evaporated to thirteen fluid ounces, and the usual four ounces (twenty-five per cent.) of spirit added, and after standing for a few hours to be filtered, and if necessary made up to sixteen fluid ounces with distilled water. An almost black liquid will result, which is perfectly tasteless, and in doses of from  $\frac{1}{2}$  to 2 fluid drachms will almost invariably produce purgation.—*Therapeutic Gazette*, January 1890.

**COCAINE IN YELLOW FEVER.**—Dr James Thorington states, in the *American Journal of the Medical Sciences* for January 1890, that in an experience of seven years' active practice on the Isthmus of Panama, where cases of yellow fever were constantly under his observation, he has tried many kinds of treatment in yellow fever—such as quinine, which he found did much more harm than good, except during convalescence. Calomel, which did good only at the beginning of an attack, and much injury if used later. Castor-oil and orange-tea, as recommended by the physicians in Cuba, did good in some instances. The pure juice of the lime with small pieces of cracked ice, as recommended by physicians in the service of the Panama Canal Company, was found more satisfactory than any of the above methods of treatment. The author tried also veratrum viride faithfully in several cases, but without success. In many of the cases Dr Thorington found that good nursing, without medicinal treatment, saved the patients. Dr Thorington noted that in the majority of cases death was attributable to nausea and vomiting, and not to suppression of the urine, and he concluded that if he could find some means of quieting this nausea, the possibilities of recovery would be greatly increased. Cocaine as an antiemetic was suggested to him by Dr Jennings, and he states that he has tried it in every case since, the results being most gratifying. Before he commenced using cocaine, he writes that he lost fifty per cent. of his yellow fever cases; but since then, he states, that he has treated twenty cases, and has had but three deaths, these three patients dying from suppression of urine. Dr Thorington claims that when cocaine is used in the treatment of yellow fever, black vomit or vomiting is never a part of the disease, and suppression of urine is then the only symptom which need cause anxiety; and even here, he states, that he has in some cases seen cocaine act as a diuretic. Before using cocaine, he states, that black vomit occurred in nearly all his cases, but now it never appears after the drug has been used, and rarely does it fail to check the vomiting and put the stomach at rest. To avoid vomiting, when the drug is administered, the author writes, he has noticed that it is better to give it in a solution on an empty stomach, as when administered immediately after taking nourishment it is apt to go beyond the stomach, or even be rejected if the patient vomits. This result is also very apt to happen if the cocaine is given in pill or tablet; whenever the patient feels nausea returning, a dose of cocaine should be immediately given, even if a preceding dose had been given fifteen minutes before. Dr Thorington has found it necessary to give as high as  $\frac{1}{2}$  to  $\frac{2}{3}$ , or even 1 grain, every half hour, if the vomiting is not checked after the first or second dose of 10 minims of a four per cent. solution. In summing up the value of cocaine in the treatment of yellow fever, the author states it to be almost a specific in his experience, doing more to cure yellow fever than any other drug he has ever tried, taking

away or removing all nausea and vomiting, acting as a diuretic, and as an excellent and sure "heart-tonic and stimulant."—*Therapeutic Gazette*, March 1890.

## MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

*Berlin. Klin. Wochenschrift*, Nos. 11 and 12, 1890.—Brieger and Fraenkel describe their investigations of the question whether pathogenic bacteria work their mischief by the intervention of chemical poisons which they may originate during their growth and development. Of course, the first condition for successful inquiry was to employ pure cultivations of the organisms experimented upon. Basic bodies, denominated "toxine," had already been found in several pathogenic micro-organisms, such as the bacillus of typhoid, tetanus, cholera, etc. Yet it was found that this toxine did not invariably call forth all the phenomena of the infectious diseases due to the bacilli, from pure cultivations of which it had been obtained; the supposition, therefore, seemed fair that, besides the already found chemical bodies, there were other substances which played a momentous part.

Brieger and Fraenkel considered that Löffler's bacillus of diphtheria was well adapted for their purpose, because it is now beyond doubt that this organism is the genuine cause of diphtheria.

Löffler had already called attention to the fact that this bacillus, when inoculated on animals, guinea-pigs, and pigeons, colonized only the immediate neighbourhood of the infected spot, yet grave alterations of texture and organs and speedy death of the animals experimented on followed.

This connexion of events could only be explained in this way—that the bacilli produced by their local multiplication a substance of exceedingly poisonous properties, which spread over the whole organism, and, independently of the bacteria, did its deadly work.

Brieger and Fraenkel consider that they have proved that Löffler's diphtheria bacillus engenders in its pure cultivation a poisonous, soluble substance separable from the bacteria, and which, when injected into susceptible animals, calls forth the same phenomena as the injection of the living micro-organism. The authors also have settled that this substance is destroyed by a heat of 60° Cent. (140° F.); that it can stand a heat of 50° Cent. even in presence of excess of muriatic acid. This last fact of itself speaks against the supposition that the poison of the diphtheria bacillus is a ferment or an enzym.

Further examination of this substance showed it was not a ptomaine or toxine; no crystallizable substance, save kreatinin and cholin, was obtained. Shortly summing up their investigations,

the authors seem to have discovered in the diphtheria bacillus a substance belonging to the albumin series of bodies which has poisonous properties, and causes the phenomena of diphtheria when injected. They propose to give it the name of "toxalbumine." In the living body they consider that the bacteria build up and separate their toxalbumine from the albumen of the tissues.

Brieger and Fraenkel also examined typhoid, tetanus, and cholera bacteria, and staphylococcus aureus and watery extracts of the internal organs of animals killed by anthrax, in the same way as they had examined the diphtheria bacillus, and found in all of them bodies which, according to their chemical behaviour, were albuminoids, were poisonous, and could therefore be aptly called toxalbumines.

The road from normal constituents of the body to substances of the most dangerous kind seems a very short one, and our organism itself may be looked upon as the proximate cause of morbid conditions let loose by the life-activity of bacteria.

*Ibidem*, No. 12.—Quinke of Kiel reiterates his observations of twenty years ago on capillary and centripetal venous pulse.

Particularly common is capillary pulse in aortic insufficiency, and is now recognised as a diagnostically important symptom, so much so that one may often be sure of such insufficiency from the presence of capillary pulse alone.

The finger-nail from its thickness sometimes, and from its occasional non-transparency, is not the best place to observe the phenomenon: it is best seen on the forehead. One may draw the end of the stethoscope or the finger-nail across the forehead, and then one observes that the reddened line or spot produced synchronously with the radial pulse and a moment after the systole, acquires an intenser colour, even a slight elevation, and an extension of the periphery of the redness—phenomena which disappear, somewhat more slowly than they came, during the diastole, again to reappear during systole. Good light, proper position of the observer towards the patient, avoidance of reflexion of light, are necessary to the proper appreciation of the phenomenon if it is not very pronounced. It depends on a paralytic dilatation of the smallest arteries and capillaries, the systolic increase of pressure extending into both. The increase of fulness is best seen where the vessels hold the least blood, therefore best at the periphery of the red line or spot. For the occurrence of the phenomenon a great difference between the systolic and diastolic arterial pressure is necessary, as happens with a jerky pulse and high and sharp pulse wave. This is very pronounced in aortic insufficiency.

The degree of ventricle dilatation is not alone to be considered, nor the amount of valvular defect, in measuring the regurgitation, but the contractile power of the ventricle as well, for a largely dilated and weakened ventricle, which could only deliver a half of



its contents, leaves less room for the regurgitation which is to follow. Therefore in compensation disturbances of aortic insufficiency one may see the characteristic properties of the pulse wave disappear, and only return when the power of the left ventricle has been restored, and the celerity of pulse and capillary pulse become again visible.

As capillary pulse may not be clearly present in every aortic insufficiency, so it is not exclusively present in it alone, but whenever the pulse is quick and jerky it may be found,—in anæmics, for instance, and chlorotics (perhaps favoured by thinness of the blood), in many nervous or muscular alterations of the heart's activity (in fever sometimes), in which the celerity of pulse depends on the configuration of the ventricle contraction for the time, or on disturbances of the innervation of the vessels. The observation of capillary pulse in these cases is not so easy, depending on many accidental or fortuitous conditions, as in aortic insufficiency, with an energetically working ventricle.

As formerly explained, the systolic increase of colour is best observed on the border of the hyperæmic line or spot, therefore in those capillaries which are perceptibly filled during the systole, and during diastole experience a considerable diminution of their lumen, owing to the elasticity of the tissues and of their walls. A certain degree of outer pressure (just that which balances the diastolic inner pressure) also favours the perception of the capillary pulse wave. The bed of the nail in slender, transparent nails is therefore a good place for its observation, and may, in favourable circumstances, be seen there even in healthy people. One may also produce it artificially by pressing a glass plate on the finger tip, or by stretching the under lip turned to the outside. Also on the circumscribed redness of the cheek, in circumscribed inflammations of the skin of many parts of the body (erysipelas) the capillary pulse is frequently visible.

The conditions which bring about the capillary pulse differ from those which cause the centripetal venous one. This latter is commonly supposed to be of rare occurrence, but it is not really so. The chief condition for its occurrence is relaxation of the vessels, the arteries particularly, then also of the capillaries and veins, as frequently happens in certain stadia of fevers accompanied by sweatings; it has been seen in typhoid, recurrent, intermittent, pyæmia, polyarthritis rheumatica, pneumonia, phthisis, and cholelithiasis.

In narrower sense nervous influences, besides the fever, might work together in cases of meningitis, spondylitis, encephalomalacia, and injuries of the cervical cord. Quinke has also seen centripetal venous pulse in non-febrile states, in chlorosis, traumatic anæmia, and carcinomas, as well as in healthy people if summer heat had relaxed the peripheral vessels. It was always in the veins of the forearm and back of the hand where it was visible. Sometimes only one venous twig showed it, sometimes many. Besides the

relaxation of the arteries, a number of other conditions are necessary for its production,—tenderness of skin, strong action of the heart so as to produce a high pulse wave, and a certain medium fulness of the veins, depending on the position of the extremity as well as on the relaxation of its veins. A slight alteration of position of hand, cooling of it or repeated touching of the veins, causes it to disappear. Perhaps this very transitoriness of it may be the reason why a centripetal venous pulse is so little known.

It comes to pass in this way—the pulse wave, which is usually extinguished in the smallest arteries and capillaries by friction and broadening out of the circulatory stream, continues itself into and beyond those vessels when they are relaxed.

It seems, therefore, from what has been said, that for the occurrence of visible capillary pulse and of centripetal venous pulse certain common conditions must be fulfilled, namely,—height and celerity of pulse wave, that this condition is absolutely necessary for capillary pulse, and that there should be the requisite circumscribed capillary hyperæmia brought about of itself or by artificial means, whilst centripetal venous pulsation depends chiefly on extensive relaxation of the larger artery and vein territories, which are only present spontaneously and without our co-operation, and for which a particular quality of the arterial pulse is of subordinate importance.

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### OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

**TOXIC ACTION OF CHROMIC ACID USED AS A CAUTERANT.**—Dr White of Philadelphia relates the case of a young woman, an inmate of the venereal wards of Philadelphia Hospital. She had a mass of papillary growths covering the labia majora and nymphæ, and extending towards the pubis and anus, and several inches thick. After two weeks of preliminary treatment, an application of half an ounce of a solution of chromic acid, containing 100 grs. to the ounce, was made. After this application the patient passed a restless night, and called frequently for water. Thirst continued all the morning without fever, and nausea supervened. At 3 A.M. she was pale, with cold extremities, pain in the left hypochondriac region, and fear of approaching death. The temperature in the axilla was 99° F. She died at 6:30 P.M., twenty-seven hours after the application of the acid. The intelligence was unimpaired. The autopsy showed numerous fine ecchymosis in the stomach, the result of vomiting. The liver showed nutmeg change. The kidneys were the seat of passive congestion; their capsules were

easily stripped off. Section of the vagina showed the mucous membrane dark-red in colour, covered with yellowish discharge, with no evidence of contact with the acid. A chemical examination of the viscera gave the following result:—The kidneys and liver contained chromium—probably chromate of sodium—which was poisonous in doses of from 1 to 3 grains. The chromic acid in this case had probably combined with the sodium carbonate of the blood to form sodium chromate. The text-books contained no word of warning against the danger of using chromic acid.—*Journal of Cutaneous and Genito-Urinary Diseases*, August 1889.

SOME UNUSUAL FORMS OF DERMATITIS VENENATA.—Dr James C. White of Boston has related three such:—1. *Chlorine*.—The skin of the face of a girl, aged 18, from the middle line of the forehead downwards, was red, swollen, and presented considerable areas of papules, vesicles, and oozing points. The eyelids were half-closed. The neck, as low as the level of the dress, was in an erythematous condition. She complained of great itching and burning, and had suffered for two days. Immediately before, she had been exposed to nascent chlorine gas when making a chemical experiment, and the parts affected had been in contact with the fumes. 2. *"Violet Water."*—A girl of 18 presented herself with a fine papular eruption of bright redness, sharply defined in outline, on the chest. She stated she had rubbed the part two days previously with "violet water." This was a bright green, alcoholic preparation, with a strong odour of orris root, the usual substitute for the genuine perfume of violets in such cosmetics. The root of this European flag, *Iris florentina*, seems to possess acid properties similar to those of the *Iris versicolor*. The dermatitis subsided in a few days. 3. *Box*.—A young woman came with acute inflammation of the face, which was swollen, red, thickly covered with papules, vesicles, and oozing areas, with intense itching and burning. It differed in some minute particulars from *rhus* poisoning; the vesicles in particular had not the peculiar lurid tint. She stated she had made an infusion of *Buxus sempervirens*, and applied it to the scalp to prevent the hair from falling out, and the liquid had not only run down upon the face, but she had subsequently washed this with the rag used in applying the decoction to the scalp. She had experienced no sensation of irritation of the scalp or face at the time. Five or six days after, the inflammation, in spite of remedies, was still severe. Box belongs to the *Euphorbiaceæ*, an Order which contains many cutaneous irritants; but Dr White had not met with irritation due to box before, nor was he aware of its popular reputation as a hair restorer.—*Boston Medical and Surgical Journal*, 12th December 1889.

ARISTOL, A NEW IODINE COMPOUND.—Eichhoff of Elberfeld has made some observations with this, a compound of iodine and thymol, prepared by F. Bayer & Co., Elberfeld. It is a reddish-brown,

amorphous powder, insoluble in alcohol, glycerin, or water; easily soluble in ether and in oils. To prevent decomposition, it must be kept in dark-coloured bottles, and must not be dissolved by heat in dispensing. It seems to combine the advantages of both its constituents in increased degree. The first case in which he used it was one of varicose ulcer with eczema of the leg. He regards this as a parasitic eczema, due to neglect of the skin as regards cleanliness, and the ulcer as the final result in such cases. The patient was kept in the horizontal position, and the affected leg was dressed three times a day with the undernoted salve, after preliminary ablation with soap and water,—

|   |           |   |   |      |
|---|-----------|---|---|------|
| R | Aristol,  | . | . | 10·0 |
|   | Vaselini, | . | . | 90·0 |

In preparing this, the aristol was first dissolved in olive oil, and the ointment spread on cotton and covered with gutta-percha paper. In three or four days the eczema was cured, and the ulcers in four days more. An extensive case of lupus vulgaris of the face of many years' duration was treated with the same salve and in the same manner, after the crusts had been removed and the surface cleansed. In a month the whole surface was nearly healed; there had been no pain occasioned, nor any local irritation; and in contrast to iodoform, which had been employed previously, and had caused toxic symptoms, there was not the least evidence of absorption, though the urine was carefully tested for iodine. It failed, however, to replace iodoform in the treatment of chancroid. In psoriasis it was inferior to chrysarobin, but it does not stain the clothes. In two cases of tinea tonsurans the hair was cut short, the head washed twice a day with soap and water, and a 5 per cent. aristol ointment applied, and a gutta-percha cap worn. In ten days the hairs were healthy, and the previously affected parts smooth and free from disease. Besides these, it was tried in a number of other cases with a more or less favourable result. He concludes that aristol is safe, possesses no toxic properties, and has the additional advantage of being odourless.—*Monatshefte für praktische Dermatologie*, 15th January 1890.

ECZEMA CAUSED BY BORAX.—Drs Féré and Lanny have published the account of two cases of eczema which occurred in persons under treatment for epilepsy by borax. This had been administered for some months in doses of 30 grains in one, of 45 grains in the other case. The eruption came out on the sides of the trunk and on the arms. It was an ordinary eczema, without any polymorphism, and on the body characterized by numerous small vesicles disposed irregularly, on the arms by the same vesicles and by round patches covered with crusts. In both cases the complaint lasted six weeks, and only ceased when the drug was suspended. This does not seem to be an eruption special to borax, but probably an eczema provoked by it in predisposed subjects. Both had pre-



viously suffered from seborrhœa of the scalp, and both had on the legs and feet old patches of eczema. Borax is often ill borne by the stomach, and it is likely that the nausea and gastric disturbance which it induced in these two cases may have had some influence on its pathogeny. Gowers has related three cases where psoriasis arose in epileptics under the influence of this drug, and which only ceased when arsenic was prescribed along with it.—*Nouvelle iconographie de la Salpêtrière*, No. 6, 1889.

**DERMOGRAPHIA.**—Under this term is described a form of factitious urticaria, due to a special excitability of the skin, which consists in the formation of œdematous prominences, with red borders resembling wheals, but arranged in figures, varying in accordance with the excitation of the integument. The rarity of this phenomena is probably exaggerated, according to M. Charles Féré, since he found it intensely in 7, moderately in 18, very slightly in 21, and not present in 91, of 120 epileptic or nervous patients whom he examined for this purpose. A predominance was found in two classes of patients,—in hysterical females and in those already subject to true urticaria. All regions of the body are not equally favourable to its manifestation. One must choose a patient abundantly supplied with smooth muscular fibres. Hence the skin of the thorax, in particular of the back, responds best. On the limbs excitability diminishes from above downwards; but it can be evoked on the face, and even on the mucous membranes. In general it is the more pronounced the more slowly it is developed. A rise of temperature, which may exceed  $2^{\circ}$ , can be noted; and the phenomena of capillary pulse, which M. Hirtz has observed in wheals, is seen here also. There is none of the intense pruritus seen in true urticaria; indeed, subjective sensations are absent, though Zanker found one of his cases complain of a slight feeling of heat; nor are there any sequelæ. Mechanical irritants are those which most markedly induce the appearances, and the faradic is less active in this respect than the galvanic current. The application of chloroform or ether, provided anæsthesia be complete, hinders the formation of the wheals. Repetition exhausts the tendency to the development for the time. The influence of epileptic seizures is interesting. During the attack the condition cannot be induced, and even after it has passed, the wheals are faint; but on the following day the capacity for their production begins to be re-established. Finally, while certain ingesta can produce true urticaria in pre-disposed persons, these have no influence on dermatographia, and do not appear even to aggravate the phenomena. And again, atropine and ergotine, used in the treatment of urticaria, do not modify dermatographia in any appreciable manner.—*Nouvelle iconographie de la Salpêtrière*, No. 6, 1889.

**TREATMENT OF INFLAMMATORY DISEASES OF THE SKIN.**—Lassar follows out this plan:—The patient is put into a bath of from  $80^{\circ}$  to  $84^{\circ}$  F., to which may be added a few pounds of bran, and gently

soaped with green or toilet soap. During the bath, except in very acute or delicate cases, or where no pruritus exists, a little of the tar mixture is applied, and washed off before leaving the water. The formula runs:—

|   |                         |         |
|---|-------------------------|---------|
| R | Ol. fagi pinguis,       |         |
|   | Ol. rusci, . . . . .    | āā 40·0 |
|   | Ol. olivarum, . . . . . | 20·0    |

At the end of the bath the temperature of the water is cooled down a few degrees, and at last the patient uses a tepid or cold shower bath. After the bath some oily or fatty preparation is applied; in particular, Lassar's paste, unless when the corium is exposed. In the case of an infant with a moist or purulent dermatitis, he recommends to bathe it as in health, then to touch all open spots, all bleeding and lymphorrhagical stomata, with a 3 per cent. solution of nitrate of silver, cover the whole body with the paste, and the face, head, and joints with 2 per cent. salicylated vaseline, and bandage with muslin so carefully that no struggling can move them. The fretful, unhappy little creature will become a clean and laughing being within a shorter space of time than under any other mode of procedure hitherto known. The following ointment does much good in all pustular affections of the hairy parts of the head and beard:—

|   |                                  |                |
|---|----------------------------------|----------------|
| R | Hyd. sulphureti rubri, . . . . . | 1·0            |
|   | Sulphuris sublimati, . . . . .   | 24·0           |
|   | Adipis, . . . . .                | 75·0           |
|   | Ol. bergamottæ, . . . . .        | gutt. aliquot. |

—*Journal of Cutaneous and Genito-Urinary Diseases*, Oct. 1889.

## PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. MILNE CHAPMAN, M.D., Inverness.

CURETTING THE UTERUS AND THE METHODS OF TREATING THE CAVITY AFTERWARDS (Johnson Alloway, *Montreal Med. Journ.*, Dec. 1889).—The writer advocates strongly the use of the sharp curette, and then considers the various methods of subsequent treatment, or, as he phrases it, "the best methods of dressing the wounded surface thus deprived of its endometrium." This he finds to be filling it carefully with a strip of iodoform gauze, and leaving the end extending from the external os. The pressure here exerted upon the uterine walls can be so beautifully and perfectly graded according to the judgment of the operator that all hæmorrhage is at once arrested. Tags of unfinished shavings are compressed firmly against the denuded surface and unite there. Under other circumstances these unfinished scrapings often necrose, and the base of the shaving forms a little eddy for retention of discharges to decompose and set up trouble. The principal locality in which these spots of danger occur is just above the internal os. When iodized phenol

or other cautery is applied, these jagged points are converted into little ulcerating pits, from which septic absorption takes place, culminating in a sharp attack of pelvic inflammation. "Every gynecologist has experienced such unpleasant result after curetting, when there previously existed no legitimate foundation for such a sequence, and it may be accounted for in the manner I have described. This danger will always exist with the injection of fluid, or the application of caustics to the interior of the uterus, and should not, therefore, be made a routine practice. Now that we are cognizant of these dangers, we can see the great safety and therapeutic advantage of filling tightly the uterine cavity with a soft elastic and aseptic material prepared with iodoform suspended in paraffin. This material, prepared by Dyer of Montreal, is in advance of every other for this purpose. It can be left in for four or five days if necessary, without the least fear of having it undergo change. There is absolutely no drain so good, and by its side pressure on the uterine walls all remnants of undetached membrane reunite, resulting in a perfectly smooth cavity surface."

THE IMPORTANCE OF DRAINAGE IN THE TREATMENT OF DISEASES OF THE UTERUS (Gill Wylie, *American Jour. of Obstet.*, Jan. 1890).—The form of drainage which the writer advocates is that of a stem pessary deeply grooved on the sides. He says, in concluding his paper:—"1. Perfect drainage of the uterine canal is of the utmost importance in all diseases of the endometrium. 2. It has been practically overlooked by gynecologists, and its importance disregarded in treatment. 3. That it can best be secured by free dilatation by means of a steel dilator used once a week, not too near menstruation, and supplemented by hard rubber drainage plugs, curetting, and intra-uterine applications if indicated. 4. That in many cases to-day being treated by the use of pessaries, and called cases of retroflexion and retroversions and flexions, all symptoms can be permanently cured in a few weeks by the use of the dilator, the drainage-plug, curette, and simple intra-uterine applications properly made. 5. That sponge or other tents left in the os and obstructing drainage for more than a few hours should never be used, for they not only obstruct drainage, but are liable to cause uterine contractions, and force the contents of the uterus out through the Fallopian tubes, and cause local peritonitis, etc. 6. That the same treatment will give better results in those obstinate cases of chronic uterine disease in which the use of chromic acid, nitric acid, and other strong caustics, or the actual or galvanic cautery, has been resorted to."

THE TREATMENT OF ACUTE ENDOMETRITIS BY DRAINAGE (Wm. M. Polk, *American Jour. of Obstet.*, Jan. 1890).—The writer states that his reason for advocating the following lines of treatment is for the purpose of limiting tubal disease, which is believed to be a frequent result of acute endometritis. Briefly, his method consists in insuring drainage from the endometrium by means of a strip of

iodoform gauze or iodoform candle wick, and he advocates it both for cases which are not associated with pregnancy and those which are, *i.e.*, those which follow abortion. In the non-pregnant cases the cervix is first dilated with all antiseptic precautions, the endometrium then dried out, and the drain introduced through a cervical speculum. The end of the gauze is brought loosely through the vagina, the outer end terminating upon a dry gauze or absorbent cotton pad placed against the vulva. This is changed daily as long as the treatment may be required. In conclusion, he suggests that in some chronic cases where the inner os is firm and resilient, and soon contracts after dilatation, the anterior wall of the cervix should be divided up to the inner os, and dilatation thus effected, so as to insure full and continuous drainage.

**DYSMENORRŒA AND STERILITY, A REPORT OF 90 CASES OF RAPID DILATATION OF THE CERVICAL CANAL FOR THE CURE OF** (Townsend, *Albany Med. Annals*).—The writer practised rapid dilatation under complete anæsthesia with rigid antiseptic precautions, and he gives the following table of results:—

|                                                              |          |
|--------------------------------------------------------------|----------|
| Dilatation in virgins for dysmenorrhœa, other means failing, | 57       |
| Complete cure of dysmenorrhœa,                               | - - - 53 |
| No better,                                                   | - - - 3  |
| Made worse,                                                  | - - - 1  |
| Dilatation in married women for dysmenorrhœa and sterility,  |          |
| other means failing,                                         | - - - 33 |
| Complete cure of dysmenorrhœa,                               | - - - 33 |
| Complete cure of sterility,                                  | - - - 27 |
| Remaining sterile 2 years or more after operation,           | - 6      |

**DOUBLE CURRENT TUBES FOR VAGINAL AND INTRA-UTERINE INJECTIONS IN OBSTETRIC PRACTICE** (Graily Hewitt, *Lancet*, March 1890).—The writer points out that in hospital practice the use of antiseptic vaginal irrigations has proved of the greatest service, but that when indiscriminately used in private practice, and without skilled supervision, failures have resulted. From facts which are recorded it appears that vaginal injections now and then produce the very effect they are intended to prevent. It seems probable, however, that a part at least of the liability to mischief from the use of vaginal injections in childbed is connected with inherent defects in the construction of the apparatus employed. He attributes the following faults to the ordinary gum elastic vaginal tube in use. It is too small and too long, and is therefore liable to get pushed into the interior of the uterus; there is no provision for return flow, and consequently, in the event of such an occurrence, the cervix might closely adapt itself to the tube, and thus intra-uterine tension be brought about; it is difficult to clean, and is apt to harbour detritus; and, further, it is impossible to tell by looking at it whether it is clean or not; and, finally, it does not deliver its stream at the end, but laterally at some little distance from the end. These objections the writer has obviated by the use of a glass tube shorter and



of greater calibre, which is square on section, with rounded corners, and with a deep groove running down each side to provide for return flow. The tube for intra-uterine injection is made on the same principle, and the instruments seem to be most admirably adapted for the objects in view.

A SUCCESSFUL CASE OF LAPAROTOMY AND SUPRA-VAGINAL AMPUTATION OF THE UTERUS FOR RUPTURE (Henry C. Coe, reprint from *Medical Record*).—In view of the gravity of the emergency which rupture of the uterus presents, we draw attention to this case, which was treated on ordinary surgical principles. On opening the abdomen, Dr Coe found that sharp arterial bleeding was going on from the rent, and he came to the conclusion that the case was not one for suture of the rent. He used the rubber tubing of a fountain syringe to constrict the uterus, and secured it to the abdominal wound by knitting needles. In conclusion, the writer states that he would adopt precisely the same method in another case of rupture of the uterus, because he believes that it would offer the best chance of saving the patient, for the following reasons:—1. The operation can be performed in the shortest possible time. Time is the most important element in these desperate cases. 2. It is impossible to properly suture such an extensive rent with contused edges as the one described, which begins at the cervix and extends through the broad ligament up into the body of the uterus. There is imminent risk of hæmorrhage after removal of the temporary constriction. 3. Where the prolonged use of instruments without strict antiseptic precautions has occurred, the interior of the uterus is sure to be badly contused, so that the subsequent danger of sepsis is great. I would rather run the risk of the additional shock to the patient from removing the lacerated uterus than expose her to the certain risk of septicæmia by leaving it. 4. Though the objection made by Dr Harris that “a cervix split by laceration cannot be very well fitted for constriction, as the part below the wire may discharge septic matter into the abdominal cavity through the rent,” is a good one, nevertheless, if the tear in the peritoneum is carefully closed, and the stump is properly constricted and shut off from the peritoneal cavity, I believe that there is less danger than there is when we trust to the suture alone without constriction. Finally, with all respect for the opinion of such a weighty authority as Dr Harris, who believes that it “would hardly be admissible” to subject a woman with a normal pelvis to “the unsexing operation of removing the lacerated uterus with the ovaries, as was done by Prévôt,” it should be borne in mind that the laparotomist is sometimes called upon to do, and to do at once, what he believes is the best thing for the patient without regard to established precedent, or even to the ordinary rules of surgery. In the presence of a dreadful emergency we cannot reason as calmly and philosophically as we would in the library.

## Part Fifth.

### MEDICAL NEWS.

THOMAS IRELAND, L.R.C.P. & S. Edin., son of Dr W. W. Ireland, Preston Lodge, Prestonpans, has been appointed by the Secretary of State for the Colonies, Government Medical Officer in British Guiana.

TOILET LANOLINE.—Improved methods of preparation have now freed lanoline from the peculiar woolly odour which the earlier specimens emitted, and it is nearly inodorous and less sticky. If the penetrative powers which it was believed to possess have not, as the result of more extended trial, been proved to be so great as those once ascribed to it, still it is unquestionably a bland and non-irritating emollient. It will be found to be a soothing application to the skin when roughened by exposure to the weather, or from other causes. Gottstein has recently expressed the opinion that a thin layer forms an impassable barrier to disease germs, so that some protection might be afforded from septic action were it smeared over a wound. Messrs Burroughs, Wellcome, & Co. have had it put up in compressible tubes, nicely scented, thus contributing another and a most useful addition to the many elegant and reliable preparations for which this enterprising firm is already so deservedly distinguished.

DENAAYER'S STERILISED LIQUID PEPTONE OF MEAT AND PEPTONATE OF IRON.—Under circumstances in which the digestive processes are weakened, the administration of peptones, which are obtained by the artificial digestion of meat, has been recommended. It is very necessary, however, that such should be thoroughly sterilised, so that there should be no risk of a further conversion into poisonous ptomaines. The process now adopted by M. Denaeyer of Brussels results in the production of model peptones, of an amber colour, not markedly bitter, and completely sterilised. It is extremely difficult to estimate the true nutritive value of all such preparations from clinical observation in disease, and still more so to form any comparative opinion as to the relative worth of different meat extracts, how far, in fact, such are mere stimulants or are true foods. We have not found our patients relish even this peptone as much as freshly prepared beef or chicken tea, but it may have its use in cases where, as in camp, or in remote country districts, it might be difficult or impossible to obtain fresh meat or fowls. The peptonate of iron is made from the peptone of meat by dissolving in it ferric hydrate, with which it combines in definite chemical proportions. This we have found to possess the power of increasing the hæmoglobin in spanæmia, and it is pleasant to take; but how far it excels or even equals other well-known and cheaper preparations of iron, our observations are not sufficient to determine.

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# Part First.

## ORIGINAL COMMUNICATIONS.

### I.—THE HEAD OF THE INFANT AT BIRTH.

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#### PART I.

FROM the point of view of the obstetrician, the most important part of the infant's body is the head. The great importance of this region of the child's body is due, in the first place, to the circumstance that in the great majority of confinements (95 per cent.) the child comes through the maternal passages head first; in the second place, for the reason that the head is the largest and most solid part of the body of the infant; and in the third place, from the fact that any abnormality in the size, form, position, or ossification of the head will immediately introduce the elements of delay and danger into the process of parturition. It is not, therefore, surprising that much has been written concerning the head of the infant, and the question may reasonably be asked whether there yet remains anything new to be said on the subject. I hope to be able to show in the following communication that there are still some questions with regard to the anatomy of the infant's head which may profitably be investigated by the obstetrician and by the anatomist.

The head consists of two parts, which differ from one another in size and in obstetric importance. These parts are the cranium and the face. In the infant the cranium is relatively much larger than the face, and this disproportion is due to the small degree of development of the latter region. The relatively small size of the face is very evident when the head is seen in sagittal section. The face also is of less importance to the obstetrician than is the cranium; for whilst the most common presentation is that of the cranial vertex, one of the rarest presentations is that of the face. The consideration of the cranium will, therefore, be taken first; and it will be necessary here briefly to recapitulate, for the sake of completeness, certain anatomical details concerning the cranium which are well known.

The cranium is made up of eight bones, two pairs and four single, which are in the infant loosely held together by membrane, and which are capable of a large amount of displacement upon



each other. The cranium is clearly divided into two parts—the vault and the base. The vault is constituted by the two halves of the frontal bone, by the two parietal bones, and by that portion of the occipital bone which lies above the foramen magnum; at the sides also the squamous part of each temporal bone completes the framework of this part of the head. The base of the cranium is composed of the basi-occiput of the sphenoid, the ethmoid, and of the petrous part of the temporal bones. The bones which make up the vault differ from those that form the base, in being thinner and more loosely joined together; thus when pressure is brought to bear upon the vault the bones are displaced, and a change in the form of the head is the result; on the other hand, pressure does not affect to any appreciable degree the base of the cranium. In this anatomical fact is found the rationale of operations, such as basilysis, which not only diminish the size of the compressible vault, but also that of the incompressible base.

The bones of the cranium are joined together by sutures; and those which lie within the sphere of touch during labour are the sagittal, the frontal, the coronal, and the lambdoidal. To the obstetrician the sagittal suture is a most important landmark. This suture connects together the upper margins of the two parietal bones, and derives its name from its resemblance to an arrow (*sagitta*); but it must be borne in mind that the resemblance to an arrow is manifest only when the anterior fontanelle is considered as the head of the arrow. It is a matter of regret that all writers do not adopt the same definition of the sagittal suture. It is usually defined as terminating in front of the anterior fontanelle, and behind at the posterior fontanelle; but some authors include the fontanelles, and others, as Tarnier and Chantreuil (vol. i. p. 411), consider the frontal suture as forming the anterior portion of the sagittal, for they state that “*la suture sagittale, grande suture, ou suture antéro-postérieure, s’étend de la racine du nez à l’angle supérieur de l’occipital.*” It is better, however, to define this suture, as does the majority of writers, as that which exists between the upper margins of the parietal bones and which is bounded in front by the coronal and behind by the lambdoidal suture. At the commencement of labour, when the vertex presents, the sagittal suture is found lying in one or other of the two diagonal diameters of the true pelvis, and the movement of internal rotation brings this suture into the antero-posterior diameter of the pelvis. The frontal, coronal, and lambdoidal sutures call for no special notice here. It is thus seen that in the head of the infant the bones of the vault are not immovably fixed to each other, as they are in the adult, but are loosely attached by a membrane composed of periosteum and dura mater, and can be moved to some extent upon one another. This constitutes one of the factors in head-moulding during labour.

The presence of fontanelles, or “openings in the head,” is one

of the most important characters of the infant's cranium. These membranous spaces are six in number, two being placed in the middle line of the vault, and four being situated laterally. Their general characters are well known, but it is not so generally recognised that their size varies considerably even in normal heads. I have measured the anterior fontanelle in a large number of cases, and have found its average length to be 2·7 cms., and its average transverse diameter to be 2 cms. In one case, where the ossification of the head was well advanced, both the antero-posterior diameter and the transverse measured 1·5 cms.; whilst in a case where the bones of the head were widely separated, without there being any hydrocephalus, the anterior fontanelle measured 3 cms. both antero-posteriorly and transversely. The variation in size of the anterior fontanelle must influence, to a very considerable extent, the degree of head moulding. With regard to the posterior or occipital fontanelle, it should be noted that if the ossification of the head be at all far advanced, there is at this spot no distinct membranous space, the tip of the supra-occiput fitting in between the parietal bones. In many cases, however, there exists a space which is then triangular in shape, and is always much smaller than the anterior fontanelle. I have found the average antero-posterior measurement of the fontanelle to be 8 mms., whilst the base of the triangular space had a length of from 7 mms. to 1 cm. In one or two cases I have seen the space entirely filled up by a Wormian bone of triangular form. The posterior fontanelle supplies an important landmark in the study and description of the mechanism of normal labour; for it is always within the reach of the examiner's finger, and its relation to the girdle of contact of the soft parts can always be ascertained during labour. Thus the so-called movement of flexion may be defined and described as that movement by which the posterior fontanelle leaves the side of the area within the girdle of contact of the canals, and comes to lie nearer to the centre of that area. This is to be preferred to any definition founded upon the relation of the chin of the infant to the sternum, for these parts are out of the reach of the fingers of the obstetrician, and we are not warranted in basing definitions upon their relations. In the same way internal rotation may be defined as a movement which brings the posterior fontanelle and sagittal suture from a diagonal diameter of the area within the girdle of contact into the antero-posterior diameter of that area, the fontanelle lying anteriorly. The relations of the girdle of contact of the soft parts and the area of the head within it can always be felt, and if it were necessary seen, by the accoucheur. It is more easy to feel the posterior fontanelle moving from the side of the area within the girdle to its centre than to note its dipping or descent.

The four lateral fontanelles, although not of great clinical significance, are not to be neglected as factors in head moulding.

I have frequently found the antero-lateral fontanelles to measure 1 ctm. antero-posteriorly, whilst the postero-lateral fontanelles may measure nearly as much. Supplementary fontanelles may exist in the cranium of the infant in various positions. I have noted them several times in connexion with the sagittal suture, and they may also lie near to the sutures, or, more rarely, they may be found at different points in the bones at a distance from any suture.

In connexion with the sutures and fontanelles of the infant's head, may be considered the fibro-cartilaginous hinge of the occiput. Budin, in his work upon the head of the infant (*De la tête du fœtus au point de vue de l'obstétrique*, 1876), lays special stress upon the existence of this hinge ("charnière cartilagineuse et fibreuse"), and points out its special importance as a factor in head moulding. It is formed by a band of tissue partly cartilaginous, partly fibrous, which extends from the posterior end of the foramen magnum outwards on each side to the postero-lateral fontanelle. Budin points out that near the middle line it is composed of cartilage, that, namely, which intervenes between the supra-occiput and the posterior border of the ex-occipital; more externally fibrous tissue intervenes between these two bones; and further out still there is another piece of cartilage at the point where the occipital bone comes into contact with the temporal and parietal of the same side. According to this observer, the inner cartilaginous plate measures from 5 to 6 mms. antero-posteriorly and 10 mms. transversely, whilst the fibrous portion of the hinge measures 9 mms. antero-posteriorly, and 10 mms. transversely. I have examined several infants' skulls, and have found that rarely does this hinge exist in the condition described by Budin. Most frequently I have found the inner plate of cartilage ossified more or less completely, whilst the fibrous portion does not measure so much antero-posteriorly as Budin states. In infants, however, which have not reached the full term of nine months, the hinge exists in its entire extent. It has been stated that if the occipital bone, or rather that part of it which lies behind this hinge, be separated from its attachments along the line of the lambdoidal suture, it can then be flexed and extended upon this hinge to a great degree. In dried skulls I have found that a small amount of movement of the occiput backwards and forwards is thus rendered possible; but even in fresh heads I have not been able to make the occiput execute the extensive movements which have been described. In seven months' infants I found the range of movement to be much greater. Still, the amount of movement thus permitted even in the full-time child will be sufficient to explain the depression of the occipital bone under the parietals which is found after prolonged labours. The existence of this hinge also serves to explain the large amount of antero-posterior shortening of the foetal head, which Dr Milne Murray found he was able to obtain by applying considerable pressure to the frontal

and occipital bones (*Edin. Obstet. Trans.*, vol. xiii. p. 206). At the same time, it must be borne in mind that the parietal bones are raised, and that in addition to the depression of the occiput there is this rising of the parietal bones, with consequent increase in the vertical diameters of the cranium. This cartilaginous hinge, it may be pointed out, has an interest also when looked at from the developmental standpoint, for it marks posteriorly the line which separates the bones of the cranial vault from those of the base. The bones of the vault are developed from the membranous capsules surrounding the encephalon, which in its turn is derived from the second ring of the protovertebral mass; whilst the bones of the base are developed from the first ring of this protovertebral mass, and pass through an intermediate cartilaginous stage before becoming ossified. The supra-occiput is thus divided developmentally from the basilar and ex-occipital portions of the bone.

The vault of the cranium has been, for descriptive purposes, divided into several regions; but some difference of opinion has long existed as to the exact signification of the terms used by obstetric writers to designate these regions. The regions are the sinciput, the occiput, and the vertex. The subject of the nomenclature of the cranial regions was one of the questions considered by the Uniformity in Obstetrical Nomenclature Committee at the International Medical Congress in Washington in 1887. It is to be regretted that the definitions then agreed upon have not been more generally adopted in the various text-books on midwifery published during the last three years; for we find that even in the *American System of Obstetrics*, published in 1888, the term vertex is held to be synonymous with the posterior fontanelle and the small area around it. The following are the definitions recommended by the committee for the regions of the cranial vault:—

*Occiput*—the portion of the head lying behind the posterior fontanelle.

*Sinciput*—the portion of the head lying in front of the bregma or anterior fontanelle.

*Vertex*—the portion of the head lying between the fontanelles and extending laterally to the parietal protuberances.

It will be observed that the vertex thus defined is a region and not a point, and whilst this definition is the most useful clinically, it would have been more strictly accurate to have defined the vertex as the point at which a line joining the two parietal eminences crosses the sagittal suture.

It will be noted that all the landmarks of the cranium which are of practical interest to the obstetrician are grouped either in or immediately around the vertex. The sutures, the fontanelles, and the parietal and occipital eminences, constitute the important landmarks of the head of the infant.

The form of the head of the infant now may be considered. The normal size and form of the head before the commencement of



labour is not yet clearly ascertained. This is due to the fact that from the passage of the head through the pelvis changes occur in its form, and these changes have not yet been fully worked out; hence, until the details of the measurements of heads of infants which have been removed by the Cæsarean section have been noted in a large number of cases, the exact form of the infant's head immediately before labour sets in cannot be definitely stated. Further, needless confusion and difficulty have been introduced into the study of this subject from the fact that different observers have taken different points on the head as their landmarks in measuring the various diameters. The latter difficulty may now be overcome by the universal adoption by obstetric writers of the definitions of the various diameters laid down at the Washington Congress. These definitions have been adopted in the present communication, and it may be well briefly to restate them at this point. There are three antero-posterior diameters:—

(a.) From the tip of the occipital bone to the lower margin of the chin=diameter occipito-mentalis, O.M.

(b.) From the occipital protuberance to the root of the nose=diameter occipito-frontalis, O.F.

(c.) From the point of union of the neck and the occiput to the centre of the anterior fontanelle=diameter sub-occipital bregmatica, s.O.B.

The definitions of the occipito-mental and occipito-frontal diameters given above agree with those found in the majority of text-books; but with regard to the sub-occipito-bregmatic diameter, some writers have placed its anterior starting-point at the posterior end of the bregma, others at the anterior end of the bregma, and still others at its centre. The definition as given by these last authors is, as will be seen, the one adopted by the congress. In addition to the three diameters above mentioned, Budin describes a fourth antero-posterior diameter, which he terms the supra-occipito-mental or maximum diameter. According to this observer the occipito-mental diameter, although generally supposed to be the longest, is not really so, and this observation is perfectly correct if the definition of the occipito-mental as given by the congress is accepted. Budin states that the maximum antero-posterior diameter is one which extends from the chin to the sagittal suture, terminating at a point in the suture which lies between the tip of the occiput and the anterior fontanelle, and varies in different cases. This observation I have confirmed in many instances. Thus, in one case the O.M. measured 10·5 ctms., whilst the maximum measured 11 ctms.; and in this instance the starting-point of the maximum diameter posteriorly lay nearly midway between the posterior fontanelle and the posterior end of the anterior fontanelle. In another case the O.M. measured 12·5 ctms., and the maximum measured 14·5 ctms.; whilst even in the normal or antepartum head the maximum diameter exceeds the occipito-

mental by from 5 mms. to 1 ctm. The maximum diameter of Budin, which it may be noted corresponds to the occipito-mental as defined by Schroeder, is important as being the longest diameter of the head, and the only diameter which is always increased during the progress of the head through the pelvis in normal labour.

With regard to the transverse diameters of the head, comparatively little confusion exists. Two are usually defined:—

(a.) Between the two parietal protuberances = diameter Bi-Parietalis, Bi-P.

(b.) Between the two lower extremities of the coronal suture = diameter bi-temporalis, Bi-T.

A bi-mastoid diameter is sometimes measured.

The vertical diameters of the head are somewhat vaguely defined, thus the fronto-mental passes from the highest point of the forehead to the chin, and the cervico- or laryngo-bregmatic passes from the middle of the anterior fontanelle to the upper and anterior part of the neck in the neighbourhood of the larynx.

In relation to each antero-posterior diameter of the head there is a corresponding circumference, and the circumference corresponding to the maximum diameter is the greatest, whilst that corresponding to the suboccipito-bregmatic diameter is the minimum circumference.

The diameter of the head being clearly defined, we are in a position to study the form of the head—first, before labour; secondly, during labour; thirdly, immediately after labour; and, fourthly, five or six days after parturition. It is impossible that such terms as ovoid, wedge-shaped, and the like, can convey an adequate idea of the form of the head, and it is necessary that the form be expressed in the terms of the three measurements represented by the antero-posterior, transverse, and vertical diameters.

*Form of the Head before Birth—the Normal Head.*—Budin points out that what are called in the text-books the normal measurements of the infant's head are not truly normal, for the form of the head has been modified by the pressure to which it has been subjected during its passage through the pelvis. This statement is true not only in cases of head presentation, but also in those in which the pelvic extremity of the infant comes first, and in those labours which from the large size of the mother's pelvis, or the small size of the child's head, are very rapidly accomplished. How, then, is the normal form and size of the infant's head at term to be ascertained? Budin employs two methods—first, the measurement of the heads of children which have been removed by the Cæsarean section before labour sets in; and, secondly, the measurement of the heads of children five or six days old, at the time when, as Budin believes, the effects of labour will have passed off. To the information obtained from these two sources, we can now add that obtained from the measurement of the head of the infant in utero in cases where frozen sections have been made of the

mother's body, when death has occurred before labour has set in. In a case reported by Budin, the mother died of pulmonary hæmorrhage, and the child was removed by Cæsarean section. Labour had not commenced. The following were the measurements of the head of the infant:—Maximum=12·9 ctms.; O.M.=12·4 ctms.; O.F.=11·8 ctms.; s.O.B.=10·3 ctms.; Bi-P.=10 ctms.; Bi-T.=8·7 ctms. The maximum circumference was 37·6 ctms., and the minimum 33·5 ctms. The total length of the child was 51 ctms. I have not had the opportunity of measuring the head of a full-time child removed by Cæsarean section; but in a case where the mother died of pneumonia between the seventh and eighth months of her pregnancy, I was able to measure the infant's head. Labour had not commenced in this case, and the measurements were—maximum=10·5 ctms.; O.M.=10 ctms.; O.F.=8·9 ctms.; s.O.B.=7·5 ctms.; Bi-P.=5·9 ctms.; Bi-T.=5·1 ctms. The total length of the child was 30 ctms. In one of Freeland Barbour's cases, where frozen sections were made of the pregnant woman, the measurements of the head in utero were—O.M.=12·7 ctms.; O.F.=10·4 ctms.; s.O.B.=10·8 ctms. In this case the patient died before labour set in, but the head of the child was in the pelvic cavity. In addition to these three cases where measurements were made of the head un moulded by labour, there may be mentioned one out of many cases in which the head was measured six days after the confinement. The measurements in this case were as follows—maximum=13 ctms.; O.M.=12·5 ctms.; O.F.=11·3 ctms.; s.O.B.=10 ctms.; Bi-P.=9·7 ctms.; Bi-T.=8·3 ctms. The circumference in the O.M. plane was 35·5 ctms., and in the s.O.B. plane 29·2 ctms. The total length of the child was 48·1 ctms. In one case in which labour was precipitate the measurements of the head very closely resembled those given above. From a study of the figures thus obtained, an idea of the normal form and size of the head before the onset of labour may be obtained. The measurements may be placed in tabular form for the sake of comparison:—

|        | Budin's Case, full-time Infant, Cæsarean Section. | Barbour's Case, full-time Infant, in Frozen Section. | Ballantyne's Case, 7½ months' Infant, removed post-mortem. | Ballantyne's Case, 6 days' old Infant. |
|--------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|----------------------------------------|
| Max.   | 12·9 ctms.                                        |                                                      | 10·5 ctms.                                                 | 13·0 ctms.                             |
| O.M.   | 12·4 „                                            | 12·7 ctms.                                           | 10·0 „                                                     | 12·5 „                                 |
| O.F.   | 11·8 „                                            | 10·4 „                                               | 8·9 „                                                      | 11·5 „                                 |
| s.O.B. | 10·3 „                                            | 10·8 „                                               | 7·5 „                                                      | 10·3 „                                 |
| Bi-P.  | 10·0 „                                            |                                                      | 5·9 „                                                      | 9·7 „                                  |
| Bi-T.  | 8·7 „                                             |                                                      | 5·1 „                                                      | 8·3 „                                  |

A glance at the accompanying drawings (Figs. 1, 2, and 6) will give an idea of how closely the head in Budin's case resembles the heads in my two cases, both as regards form, and as regards rela-

tive length of the diameters. The maximum diameter in Budin's case was 5 mms. longer than the O.M., 1.1 ctms. longer than the O.F., and 2.6 ctms. longer than the s.O.B.; in the case of the seven and a half months' foetus, whose head I measured, the maximum exceeded the O.M. by 5 mms., the O.F. by 1.6 ctms., and the s.O.B. by 3 ctms.; and in the case of the full-time infant, six days old, the maximum exceeded the O.M. by 5 mms., the O.F. by 1.7 ctms., and the s.O.B. by 3 ctms. In regard to the transverse diameters, the Bi-P., in Budin's case (Fig. 4), exceeded the Bi-T. by 1.3 ctms.; in the seven and a half months' infant the Bi-P. measured 8 mms. more than the Bi-T.; whilst in the six days old infant the Bi-P. measured 1.4 ctms. more than the Bi-T. In the case of the seven and a half months' infant it will be observed that both the absolute and relative lengths of the two transverse diameters differ considerably from those seen in the full-time child; but this difference is to be accounted for by the relatively small development of the head of the foetus in a transverse direction, along with the small size of the parietal eminences. From Budin's researches and those of Labat (*La tête du fœtus au point du vue obstétrical*, Labat, 1881), it is probable that, in the normal unmoulded head, the bi-parietal diameter is a little more than 1 ctm. greater than the bi-temporal diameter. Whilst we may regard the head, in the three cases given above, as showing the normal unmoulded form, we may also provisionally state that the diameters of the normal head of an infant of from 48 to 51 ctms. (19 to 20 inches) in length are as follows:—

|                         |      |       |                |         |                                |
|-------------------------|------|-------|----------------|---------|--------------------------------|
| Maximum,                | 13   | ctms. | $5\frac{1}{3}$ | inches. |                                |
| Occipito-Mental,        | 12.5 | "     | $4\frac{7}{8}$ | "       | (nearly 5 inches).             |
| Occipito-Frontal,       | 11.5 | "     | $4\frac{1}{2}$ | "       |                                |
| Sub-Occipito-Bregmatic, | 10.3 | "     | $4\frac{1}{8}$ | "       | (about 4 inches).              |
| Bi-Parietal,            | 10.0 | "     | $3\frac{1}{2}$ | "       | (about 4 inches).              |
| Bi-Temporal,            | 8.7  | "     | $3\frac{1}{8}$ | "       | (about $3\frac{1}{2}$ inches). |

In Barbour's case it is to be noted that whilst the occipito-mental agrees closely with that diameter in the other cases, the occipito-frontal is less, and the sub-occipito-bregmatic greater than in the other cases.

#### *Form of the Head during Labour—The Moulding Head.*

It is well known that the head becomes moulded during its passage through the pelvis. This moulding is, in the first place, due to the fact that the expulsive powers are propelling the head through canals or passages which offer considerable resistance even in normal cases, but it is also due to certain inherent characteristics of the head, for there exist in the head certain sutures and fontanelles which permit the bones to glide one upon the other; there is, secondly, incomplete ossification of the bones themselves; and there is, thirdly, the presence of the cartilaginous hinge of the



occiput. Our ideas of the form of the head and of the length of its diameters during labour have hitherto been derived from an examination of the head immediately after labour, and from clinical examination by touch during the progress. From these two methods, which are neither of them free from fallacy (for the immediate elastic recoil of the head after its expulsion from the canals must be considerable, and the obstetrician's conclusions derived from the sense of touch may not be accurate)—from these two methods it has been affirmed, that during labour the frontal bone is somewhat depressed under the margins of the parietal bones, the tip of the occiput is also depressed below the parietals, and the parietal bone, which lies anteriorly in the pelvis, slightly overrides that which lies next the sacrum. In a recent contribution (*Reports of Laboratory of Royal College of Physicians, Edinburgh*, vol. ii.) Barbour and Webster give a drawing of a very interesting frozen section of a woman who died at the end of the second stage of labour, and in this section the vertical elongation and lateral deformity of the moulding infant's head are well displayed.

The measurements of the head in this case were as follows:—

| Maximum,                | 16   | ctms. | 6               | inches (approx.) |
|-------------------------|------|-------|-----------------|------------------|
| Occipito-Mental,        | 13   | "     | 5               | " "              |
| Occipito-Frontal,       | 10   | "     | 4               | " "              |
| Sub-Occipito-Bregmatic, | 10·8 | "     | 4 $\frac{1}{4}$ | " "              |
| Bi-Parietal,            | 8·8  | "     | 3 $\frac{1}{2}$ | " "              |
| Bi-Temporal,            | 8·7  | "     | 3 $\frac{1}{2}$ | " "              |

*Form of the Head immediately after Labour.*—Countless observations have been made upon the form and diameters of the infant's head immediately after labour. The moulding which has occurred during labour is present, but, no doubt, in a less marked degree, after parturition is completed. If the diameters be compared with those of the normal unmoulded head, it is seen that the O.M., the O.F., and the s.O.B. are diminished whilst the maximum diameter is increased. In one of Budin's cases in which the head lay in the O.L.A. position, the measurements were—Max. = 13·9 ctms.; O.M. = 11·8 ctms.; O.F. = 11 ctms.; and the s.O.B. = 8·6 ctms. The average measurements which I have found so closely agree with those as to be practically identical. There is, therefore, a compression of the head in the sub-occipito-bregmatic plane, and a compensatory enlargement in the plane of the maximum diameter. In addition, there is present in many cases what is known as the parietal deformity. This transverse deformity has been specially studied by Fankhauser (*Die Schadelform nach Hinterhauptslage*, Bern, 1872), Labat, and others. The parietal bone which lies posteriorly *quâ* the pelvis, the left parietal therefore, in O.L.A. cases, is depressed at the sagittal suture below the contiguous margin of its fellow. In other words, the bone which lies anteriorly is at a lower level *quâ* the pelvis

than that which is in relation with the posterior wall of the pelvis. Further, the parietal eminence, which lies anteriorly, is carried backwards *quâ* the head, and the whole of this side of the head is flattened. Barbour's specimen, to which reference has already been made, shows that this parietal deformity is produced during labour, and that it may be unaccompanied by any overlapping of the parietal bones. The cause of its production is probably to be found in the existence of a triangular deficiency in the anterior pelvic wall, and in the presence of firm resisting structures posteriorly.

In occipito-dextra-posterior cases the moulding of the head and consequent change in form is more marked than in occipito-læva-anterior cases, and this is more especially the case in the labours where the head has not rotated well. In one case in which I made frozen sections of the infant, the peculiar moulding of the head is well seen (Fig. 5). The tip of the occiput is depressed below the margins of the parietal bones at the posterior fontanelle, and there is also great parietal distortion, for the right parietal bone, which lay posteriorly *quâ* the pelvis, is depressed below that which lay anteriorly, and the sagittal suture is displaced to the left of the middle line of the infant's body. In one of Budin's cases the head lay in the O.D.P. position, and the following were the head measurements as compared with those in my own case:—

|                | Budin's Case. | My own.    |
|----------------|---------------|------------|
| Maximum,       | 15·6 ctms.    | 14·5 ctms. |
| O.M. diameter, | 13·9   "      | 12·8   "   |
| O.F.       "   | 10·8   "      | 11·5   "   |
| s.O.B.     "   | 9·4    "      | 10·2   "   |

The figures show that in Budin's case the elongation of the maximum diameter and the shortening of the O.F. and s.O.B. diameters have been greater than in my case, and this fact is also shown in the drawings (Figs. 5 and 6).

Budin, in his work already quoted, gives drawings and measurements of the head in pelvic cases, in face cases, and in others; but I have had no opportunity of studying the heads from such cases, either in the living infant or by means of frozen sections, and shall therefore omit any reference to them.

*Form of the Head a few Days after Labour.*—From elaborate statistics, Budin shows that during the days that follow birth, all the diameters of the head increase with the exception of the maximum diameter, which diminishes in length. After the first week of life, however, the maximum diameter also begins to increase in length. The increase in the diameters is due to the enlargement of the sutures and fontanelles, which in turn is due to the fact that the bones of the cranial vault no longer override one another, but lie in the same plane. In a typical case (Fig. 6) I found the head diameters at birth and six days afterwards to be as follow:—

|          | At Birth. | Six Days after Birth. |
|----------|-----------|-----------------------|
| Maximum, | 13·5 ctm. | 13·0 ctm.             |
| O.M.     | 12·3 "    | 12·5 "                |
| O.F.     | 10·4 "    | 11·3 "                |
| s.O.B.   | 8·3 "     | 10·3 "                |
| Bi-P.    | 8·0 "     | 9·7 "                 |
| Bi-T.    | 7·0 "     | 8·3 "                 |

From the above table it will be seen that there is six days after birth a great increase, varying from 1 ctm. to nearly 2 ctm. in the length of the occipito-frontal, sub-occipito-bregmatic, bi-parietal, and bi-temporal diameters. The occipito-mental shows a trifling increase, whilst the maximum shows a decrease of 5 mms. There is, therefore, six days after labour, a return to the conditions of the head which existed before labour began, with the exception that the sub-occipito-bregmatic diameter does not quite regain its former length.

Such are the changes which occur in the form and diameters of the infant's head during and after birth; there remains for consideration the wedge-shape of the head.

The head at birth has nearly always a wedge-shape as viewed from behind, from above, and from the side; but the wedge-shape, as seen from the side, is very important, as upon its existence depends, to a great extent, Lahs' theory of flexion (*Die Theorie der Geburt*, Lahs, 1877; *Head Flexion in Labour*, A. R. Simpson, 1879). Lahs pointed out that the head, as viewed from the side, has an asymmetrical wedge-shape, the occipital end of the wedge being steeper, and the anterior, or sincipital end, being more gently sloping, and upon this fact he founded his theory of the causation of head flexion in labour. The theory is now well known, and may be briefly stated as follows:—"That end of the cephalic ovoid will be guided foremost, the tangent of whose surface in the girdle of contact meets the perpendicular of that zone at the smallest angle." A reference to the drawings of the un moulded head will show that the asymmetrical wedge-shape does exist before labour begins, whilst Braune's plate showing the head at the beginning of the second stage of labour, and Barbour's recent plate, showing the head nearly at the end of the second stage, demonstrate that the wedge-shape is greatly increased during labour. Again, drawings of the head made immediately after labour show the marked wedge-shape which, however, lessens in a few days, the head resuming very nearly its un moulded form. It would seem, therefore, that the head has a primitive wedge-shape, and whilst this may be, and in all probability is, at least one factor in the causation of flexion, it is also evident that flexion increases and emphasizes the wedge-shape as labour goes on. The formation of the caput succedaneum still further increases the wedge-shape of the head. It seems clear also that the wedge-shape of the normal head is closely related to the primitive conical shape of the bones of the cranial vault. Cleland,

in his *Memoir on the Form of the Human Skull*, points out the fact that, before birth, the two halves of the frontal bone, the two parietal bones, and the supra-occiput, "each present a prominent eminence from which the bone radiates in nearly straight lines." After birth a rounding of these eminences occurs. "Each roof bone is at first conical, and afterwards more nearly approaches a spherical curve." Any deviation from the normal form of the roof bones will, therefore, interfere with the mechanism of labour, if Lahs' explanation be the true one, and this may be an additional reason why premature ossification of the head causes so much difficulty in labour.

*Proportionate Size of Vault and Base of Cranium.*—In a recent memoir ("Form of the Human Skull," Cleland, *Memoirs and Memoranda of Anatomy*, vol. i. pp. 13–26, 1889) Cleland makes the following statement:—"The arch elongates more rapidly than the base in foetal life, until at birth, or soon afterwards, the arch, as measured from the root of the nose round to the back of the foramen magnum, has reached its highest proportionate length, as compared with a straight line uniting the same points, namely, —a proportion slightly exceeding 3 to 1." I have measured the cranial vault and base in a number of full time children, and have obtained the following results:—

| Case | Vault. |            | Base.     |   |
|------|--------|------------|-----------|---|
|      | I.     | 22·2 ctms. | 8·0 ctms. |   |
| "    | II.    | 23·0 "     | 8·0       | " |
| "    | III.   | 24·5 "     | 7·5       | " |
| "    | IV.    | 26·0 "     | 8·5       | " |
| "    | V.     | 21·0 "     | 7·5       | " |
| "    | VI.    | 23·0 "     | 8·4       | " |
| "    | VII.   | 19·0 "     | 6·0       | " |
| "    | VIII.  | 23·0 "     | 7·5       | " |
| "    | IX.    | 20·5 "     | 6·8       | " |
| "    | X.     | 21·0 "     | 8·0       | " |

These measurements were made upon full-time children with no obvious deformity of the cranium, and the result is that the vault was on an average nearly three times the length of the base. The exact proportion was 2·93 times, or 223·2 ctms. to 76·2 ctms. in the ten cases. I also measured the vault and base in foetal skulls, in cases where labour had expelled the foetus before the seventh month, with the following results:—

| Case | Vault. |            | Base.     |   |
|------|--------|------------|-----------|---|
|      | I.     | 17·0 ctms. | 5·5 ctms. |   |
| "    | II.    | 17·5 "     | 5·7       | " |
| "    | III.   | 9·5 "      | 3·0       | " |

The vault in these cases was therefore almost exactly three



times the length of the base, for on taking the average the relation is seen to be as 3·09 to 1 (vaults 44·0 ctms., bases 14·2 ctms.) In two children I ascertained the relation of vault to base; thus, in the case of a child of six the vault measured 34 ctms. and the base 12 ctms., whilst in a child of thirteen years of age the proportion was 38 ctms. to 13 ctms. In these cases the vault was 2·88 times longer than the base. In the adult Cleland finds that in Scotch skulls the proportion is as 2·72 to 1. It will be seen that with regard to the measurement of the arch and its relation to that of the base at birth, the figures in my cases do not quite give the relative proportion of a little over 3 to 1 which Cleland finds to be the rule. The probability is that Cleland measured heads of children a few days old, in which the compressing effects of labour had passed off, whilst I measured the skulls of still-born children at the time when the bones were overlapping. Cleland, in the case of five skulls of new-born children, finds the proportion of arch to base to be 3·06 to 1; my measurements made upon ten skulls gave a proportion of 2·93 to 1. It is not, therefore, altogether certain that the arch bears a greater proportion to the base at the time of birth than at any time either before or after birth; it is most probable that during the last three months of intra-uterine life and the first ten years of extra-uterine the arch of the cranium bears to the base the proportion of 3 (or nearly 3) to 1. After ten years of age the proportion sinks to 2·7 or 2·8 to 1.

*The Orbito-Nasal Angle.*—Cleland, in his paper read before the Royal Society (*Philosophical Transactions of the Royal Society*, vol. clx. pp. 117–174), gives measurements of the orbito-nasal angle in the foetus, in the infant at the time of birth, in children, and in adults. He states that “in infants at birth it has attained a greater size than it has either before or afterwards, but as childhood advances it becomes rather smaller than the adult average.” The angle is that at which the front of the upper jaw lies in relation to the floor of the anterior fossa of the cranium. It is measured by drawing a line from the optic foramen to the fronto-nasal suture, and another from the suture to the tip of the nasal spine of the maxilla; the contained angle is the orbito-nasal. In a recent contribution to the subject Cleland draws the line to the *basal* of the nasal spine; but I have, in my observations, drawn it to the tip in order to compare the results with those which Cleland has published. The method I employed was as follows: A thin strip of Britannia metal was taken, one end of which was placed in the optic foramen. The metal was then bent downwards at the level of the fronto-nasal suture until its lower end came in line with the tip of the nasal spine. The angle thus obtained was traced upon paper. The sides were then produced, and the angle formed was read off by means of a protractor. In foetal skulls (from four to eight months) Cleland found the average angle to be one of 88°. This average he arrived at from the measure-



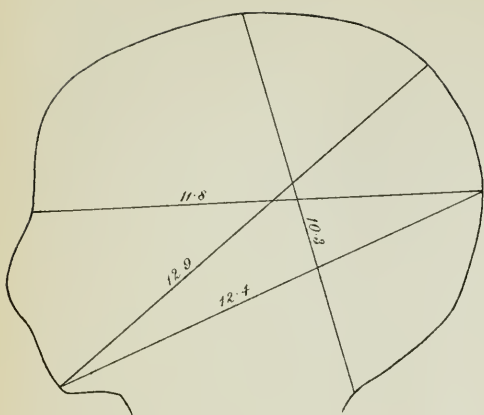


*Fig 1*

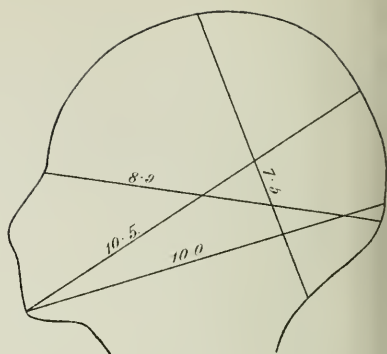


*Fig 2*

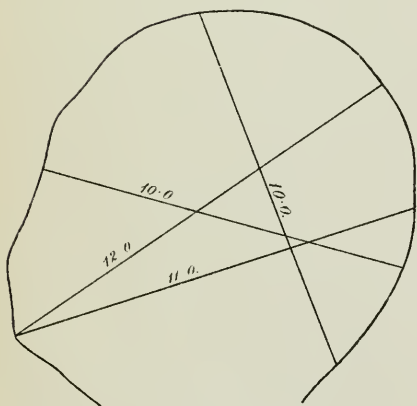


*Fig 3*

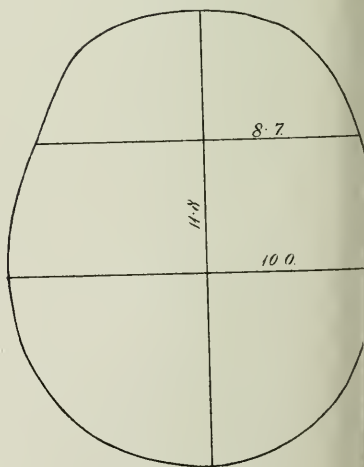


*Fig 4*

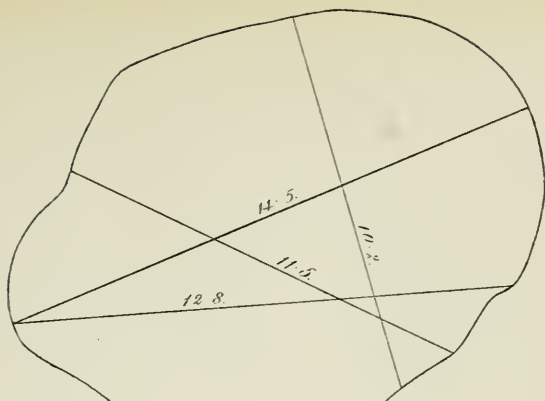


*Fig 5.*

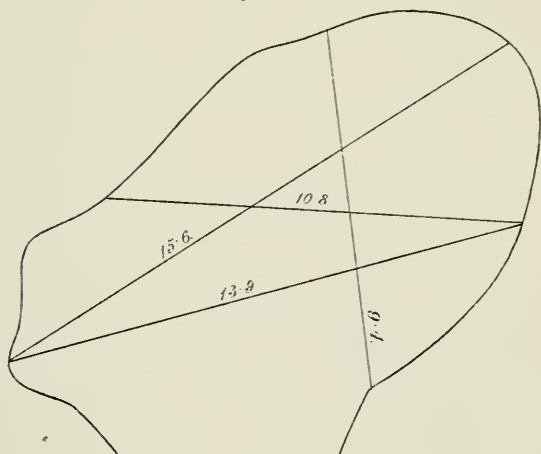


*Fig 6*

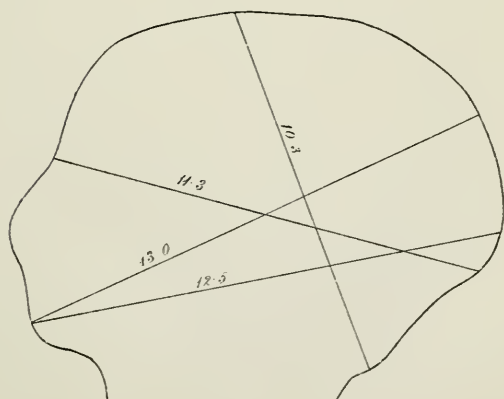


*Fig 7*





ment of six skulls. I have only been able to measure three skulls.

|         | Age.      | Orbito-nasal angle. |
|---------|-----------|---------------------|
| Case I. | 5 months. | 80°.                |
| „ II.   | 5 „       | 77°.                |
| „ III.  | 6 „       | 88°.                |

The average which was obtained was  $81^{\circ}6$ , an average smaller than that found by Cleland. At the time of birth Cleland gives the angle in five skulls and gets an average of  $98^{\circ}$ . I have measured the angle in ten full-time skulls, and get the average measurement of  $84^{\circ}8$ .

| Cleland's cases.        | My own cases.          |
|-------------------------|------------------------|
| Orbito-nasal angle.     | Orbito-nasal angle.    |
| Case I. $102^{\circ}$ . | Case I. $87^{\circ}$ . |
| „ II. $94^{\circ}$ .    | „ II. $77^{\circ}$ .   |
| „ III. $103^{\circ}$ .  | „ III. $93^{\circ}$ .  |
| „ IV. $97^{\circ}$ .    | „ IV. $75^{\circ}$ .   |
| „ V. $96^{\circ}$ .     | „ V. $83^{\circ}$ .    |
|                         | „ VI. $87^{\circ}$ .   |
|                         | „ VII. $88^{\circ}$ .  |
|                         | „ VIII. $91^{\circ}$ . |
|                         | „ IX. $89^{\circ}$ .   |
|                         | „ X. $78^{\circ}$ .    |

It will be seen that there is a great discrepancy between the measurements in the two series of observations, in Cleland's the angle at birth being more than a right angle ( $98^{\circ}$ ), in mine the angle being less than a right angle ( $84^{\circ}8$ ). At the same time, the results in both cases agree in giving the angle at birth as greater than that in skulls of four to eight months' fetuses, but the difference is not so great in my cases as in Cleland's. In the latter it is  $98^{\circ}$  to  $88^{\circ}$ ; in the former,  $84^{\circ}8$  to  $81^{\circ}6$ . The conclusion which is reached is that there must be considerable variations with regard to the relation of the floor of the anterior cranial fossa to the front of the upper jaw in the infant at birth.

The relation of the soft parts of the head of the infant I must defer until a future occasion.

#### DESCRIPTION OF PLATES.

- FIG. 1.—Sagittal section of "normal head" (Budin), half natural size.  
 FIG. 2.—Sagittal section of normal head of  $7\frac{1}{2}$  months' fetus, half natural size.  
 FIG. 3.—Sagittal section of head immediately after normal easy labour.  
 FIG. 4.—Normal head as seen from above (Budin).  
 FIG. 5.—Sagittal section of head immediately after labour (O.D.P. position).  
 FIG. 6.—Sagittal section of head immediately after labour (O.D.P. position, Budin).  
 FIG. 7.—Sagittal section of head of infant 6 days old, half natural size.

## II.—CASE OF UNILOCULAR ECHINOCOCCUS OF THE LIVER.

By Professor FRANCESCO ORSI, University of Pavia.

Translated by JOHN BOYD, M.D., Slamannan.

I PUBLISH this case, not from it presenting anything extraordinary to me, but from several circumstances extraneous to the fact itself, and because I consider it right to make it known to comfort the humble, conscientious, and frank practitioners of the salutary art.

This short account will demonstrate,—1st, That at times more light will emanate from the modest glow-worm than from certain stars of the clinical firmament; 2nd, That from mistaken respect to the medical prodigy or *for a quiet life*, sometimes the means of benefit for the patient is let go.

Now for our narration:—

R. N., aged 30, single, miller, of excellent family history, never remembers having suffered from infantile diseases. At 14 years of age went to reside at Buenos Ayres, and was troubled repeatedly with incontinence of urine, which came and went without cause or remedy. At 20, having returned home for the conscription, he fell sick of typhoid, from which he recovered without sequelæ of any sort. At 21 he went back to America and enjoyed always the best health, notwithstanding sexual and alcoholic abuse. At 28 he contracted a venereal ulcer on the penis, followed by a suppurating bubo, but with complete absence of morbid appearances, early or late, on the skin, mucous membranes, cephalalgia, baldness, or nocturnal osseous pains. About a year ago, after having felt abdominal colic and diarrhœa for three or four days, he noticed an *indolent* tumour at the right side of the epigastrium, extending to the corresponding hypochondrium, without the slightest trace of fever, nausea, vomiting, nor digestive nor alvine disturbance; only complaining of a little anorexia and weakness. He applied to some doctor in the capital of the Republica de la Plata, who advised him to return to Europe to V. (his birthplace), where he could be *submitted to a non-serious surgical operation with better result than in America*. The patient said that, frightened for his skin, he immediately left America and arrived at V. After having been visited by the parish doctor, he directly went to consult the nearest medical celebrity, who, in ten to twelve visits in the course of seven months, made him consume 36 grammes of blue ointment by friction, 40 grammes of iodide of potassium by mouth, a flask of Fowler's liquid, and on the 2nd December 1889 prescribed 3 grammes of creosote in 10 of alcohol, 10 drops before meals, in Seltzer water. If the use of the preceding remedies had exhausted the robust constitution of the patient, the last potion finished up by spoiling the stomach, destroying the appetite, and causing general agitation and fever, as he said. He left off the remedies and the consultant, called in

anew the humble parish doctor, who, still of the *same opinion that water was present in the region of the liver*, recommended him to come to me to hear my unbiassed opinion of the matter. Although fully convinced of the mistake of the consultant, the poor practitioner hesitated to operate himself in view of the inertia shown by three eminent surgeons who had seen R. N. separately during the course of the seven months, and who unanimously advised him to wait for the result of the treatment carried on by the consulting physician.

R. N. presented himself in my study, and having heard the history, read and looked over the authentic prescriptions, I passed to the objective examination. He is tall, thin, olive-coloured countenance, regular osseous and muscular development, little subcutaneous fat, and entirely exempt from any morbid affections of the nervous, circulatory, respiratory, uropoietic, or locomotory systems. The cutaneous and sexual apparatus present two small morbid indications in narrow cicatrices on the penis and inguinal regions. My attention was absorbed by the digestive apparatus, actually that which alone was affected, showing the ordinary signs of right inguinal hernia, free; and most evident indications of the abdominal tumour sacculated, hepatic. The right half of the epigastrium appeared 7 to 8 mm. above the level of the left. The skin above the tumefaction is normal in colour, density, and sensibility, mobile in large patches, and from percussion and palpation I ascertained the presence of a substance with defined margin inferiorly, triangular in form, of notable extension, variable in substance and surface, indolent and movable by respiration or manual exploration. The base of this triangular body rested superiorly in the right thorax on a line from the mid-sternum at the level of the superior border of the fifth rib, descending to the sixth rib at the anterior axillary line; the blunted apex would almost touch the umbilicus, measuring on the right diameter 17 cent., on the corresponding papillary 15 cent., to the anterior axillary 11; sides of the triangle curved and unequal. It occupied completely the right hypochondrium, the epigastrium nearly, also the right epicolica and the umbilical. The tumour felt elastic and fluctuating, of parenchymatous consistence, smooth and convex, resembling the liver at its margin. The left hypochondrium there was median, axillary obtusely from the 7th to the 11th rib.

The abdomen, except where occupied by the tumour, was compressible. Some anorexia and constipation were present. Pulse and temperature normal.

*Diagnosis.*—The site, form, borders, and consistence of the greater part of the tumour, its depth and behaviour during the act of respiration, left no doubt as to its localization on the liver. This organ was notably enlarged, somewhat turned in front on its transversal axis; on its superior convex surface there was certainly implanted a sac containing liquid material, therefore fluctuating. From its position on the convexity and not the margin of the



hepatic organ, from the absence of all gall-stone symptoms, the idea of any sort of liquid collection in the gall bladder was removed.

Thus narrowed, it was inadmissible to consider any but one of three morbid possibilities,—1st, Abscess, perihepatic or hepatic; or, 2nd, Cystic degeneration of a hepatic heteroplasm; or, 3rd, Echinococcus unilocular of the liver.

I eliminated the first from absence of indication of abdominal phlegmon ending in perihepatic suppuration, or rather perihepatic cellulitis. Hepatic abscess was also excluded from lack of causation, traumatism, hepatic calculi, metastatic collections; neither local nor general symptoms, nausea, vomiting, fever, perspiration; the duration of the malady—one year—guaranteed against that view.

The second proposition was equally excluded for various conclusive reasons. Hepatic syphilis was also eliminated by the absence of secondary syphilis, the tertiary being very different from the form in this patient's case, as also from the inutility of the mercurial and iodic treatment. With respect to other neo-productions in the liver, I consider the homoplastic are very rare, seldom soften or undergo cystic degeneration; while the heteroplastic develop, in the liver specially, under form of infiltration, give rise to local and general phenomena, and latterly augment when the neo-production softens—on which follows the ultimate phase.

No such phenomena were presented by our patient; hence we were easily led to the diagnosis of unilocular echinococcus of the liver, which prefers exactly the convexity of this organ.

I comforted R. N. by assuring him his malady was not serious; that I agreed entirely with the American and the parish doctor; that the bag of water he carried about in his liver could be emptied by a simple puncture; if it reaccumulated the process could be repeated. He agreed to enter into my clinica for three or four days.

On the 10th January 1890 I punctured the central portion of the tumour with the smallest trocar of Potain's apparatus, from which issued 1150 cc. of clear water, alkaline, sp. gr. 1005, containing traces of albumen, 35 per 1000 of glycosin, a small amount of chlorates, little phosphates; the carbonate of calcium relatively large in form if separated and grouped; and a large quantity of heads of tænia, armed with many hooklets 30-45.

I observed on acidifying with acetic acid a little of the liquid, and boiling, it became a slightly opaque dull blue, particularly at the bottom of the tube; the same with nitric acid, which with nitras argenti form chloride of silver, taking the form of connected filaments—not separate flocculi. Henty's method disclosed succinum.

After the operation R. N. is contented (*contento come una Pasqua*), complained of nothing, feels appetite, and has no trace of fever. The epigastrium is flattened and level. On the 15th, the patient feeling himself very well, got leave from my clinica, carrying with him a congratulatory letter to his country doctor, with a phial of the liquid extracted from the cyst, as requested.

From the above clinical history it is evident,—1st, The two

obscure doctors knew the disease of R. N., while a great scientific luminary, despising all other opinion, did not comprehend it even after from ten to twelve consultative visits. First as syphilitic and afterwards as carcinomatous, he sent the therapeutic assassin to hunt up and destroy the bacillus of cancer, but this entity, unwilling or unable to traverse the current of the hæmatic circulation, halted at the first station—the stomach, which he attacked and discreetly damaged. 2nd, Inasmuch as abdominal diseases constitute a great rock on which is often wrecked the most proven diagnostic ability, the symptoms being clearly evident, and easy the diagnosis of R. N.'s malady, it would be inadmissible that none of the three eminent surgeons were unable to remove the *fluctuation* from his right hypochondrium. Why did none propose at least an explorative puncture? unless paralyzed by blind confidence in the judgment of the consulting physician, or averse to having variance with him? It is absurd to suppose that these surgeons, among whom was a *patologi avvenerista*, would be afraid of risking an exploratory puncture antiseptically performed. Or did the *avveneristi* (*physicians of the future*), considering it a hepatic abscess, not wish to defer opening from certain special views of his own?

These *avveneristi* of science are surely exceptional beings. They showed themselves very respectful to the medical magnate, but little regardful of the rights of the poor patients in the hospitals and clinics, whom they come to consider their own property, a prey, an instrument and medium for their theoretic researches. These retaining the monopoly of *true scientific direction*, according to their talent, perforate the parietes of the cavity of the body of those unfortunates, penetrate into the parenchyma of the viscera to fish up the bacillus spirillum plasmoide, etc., and when called in to puncture with the view of a radical cure, or to alleviate pain, remain inoperative.

Hear, oh reader, what I happened to see in an hospital ward, directed by an *avvenerista*.

For some days there lay in that Infirmary a man of middle age, who suffered from the collective symptoms of left pleuritis exudative, which passed on to empyema, venting itself. He had orthopnoea, was pale and depressed, strongly asthmatic, bathed in perspiration, with small, weak, frequent pulse; unable to stir without crying with pain. And inasmuch as the intra-pleural pus in making its way to the exterior through the condensed and firm muscles of a robust man had produced a fluctuating swelling in the posterior and inferior side of the left thorax, as well as extensive, most painful infiltration in the lumbar region, extending almost to the opposite hip. With a simple incision the poor body could have been relieved. But the *avvenerista* allowed the patient to suffer, perhaps with the view of waiting till the variegated bacilli, finding themselves in a natural and appropriate medium of culture, should give rise to some cross-breeding, originating the birth of a new species or a bacillary monster, attached to

and immortalizing his own name in the history of parasites ! I did not hesitate, in front of such suffering, to declare to all present the indispensability of operating on the patient.

Such direction of the *avveneristi* in science may perhaps be true and just, but to my poor thinking it is certainly not the most beneficial to the present generation ; history will declare if future generations at least may derive advantage therefrom. The *avveneristi* believe they can impose upon Nature. Neglecting the old useful pharmacy, they stuff and waste the stomach with new remedies that daily swarm in the drug shops. Despising the simple, efficacious, curative agents, they pedantically follow the practice contained in the not infrequent therapeutic nonsense which reaches us from over the Alps—such, for example, as those of Bergeron, Weigart, Metchnikow, and Charcot.

The *avveneristi* excogitate and put in practice the notion of the *bacteria-therapia*, which might be termed comical if it was not ascertained lethal. The *avveneristi* favour the diffusion of the *funereal* Utopia of Pasteur in the anti-rabies inoculation, and attempt, moreover, the insertion of the carbuncle-virus, which might have become a true disaster in the rural economy of the Agro Romana, if in Parliament there had not been raised a powerful voice to stigmatize this endeavour *as a sordid speculation*.

In the line of science I have little to expatiate on the case, and no authority, this being the only case of echinococcus of the liver which occurred to me during my long career as physician and instructor. Seven years ago I was called into consultation by two young medical men on a gentleman, who it was feared suffered from softened diffused sarcoma of the abdomen. I found the general condition good, and distinct fluctuation in various points of the abdominal tumour, intra-peritoneal and periumbilical ; diagnosed a multilocular echinococcus of the mesentery, and proposed the puncture of the cysts. But the patient, on hearing my advice, refused, and would wait rather than have holes made in his belly. Less than a month from my consultation that person was attacked by severe pain in his bowels, followed by profuse liquid alvine discharges. The material thereby eliminated was not examined by the doctors. Twice within these last seven years I saw the patient referred to, who continually suffered from constipation and slow intestinal digestion, uneasy tension around the navel, a diffuse obstruction with a floating point. I still take the same view of the case. Perhaps we have here an instance of the so-called hydatiginous cysts, which are none other than multilocular cysts of sterile echinococcus, in which are destroyed by involution the scolices and hooklets.

*Note by Translator.*—The above extract from the *Curosità Cliniche*, with which I am favoured from time to time by Professor Orsi, is the more chivalrous in his defence of the obscure practitioner from he himself being one of the brightest stars in the clinical firmament, besides being author of *The* text-book of the Italian students of Practice of Physic.

III.—CASE OF DISEASE OF THE HIP-JOINT, FOLLOWED BY DISLOCATION ON TO THE DORSUM OF THE ILIUM. OPERATION FOR REDUCTION OF THE DISLOCATION, FOLLOWED BY EXCISION OF THE HEAD OF THE FEMUR.

By A. G. MILLER, F.R.C.S.E.

*(Read before the Edinburgh Medico-Chirurgical Society, 7th May 1890.)*

M. B., a girl æt. 12, from Linlithgow, was admitted to my wards on the 25th September 1889. The history given was that she had pulled the shafts of a cart over on her the day before. She complained of pain in the right hip and knee. She presented the appearances, most typically, of dislocation of the right hip on to the dorsum ilii. There were no evidences of any recent injury, but the girl was remarkably hysterical, and had evidently got a severe fright. As I was absent from town, Mr Caird examined the girl, and came to the conclusion that the dislocation was not recent, and was probably due to disease of the joint. In a few days the patient was able to get up and to walk a little, with the toes of the right foot touching the ground. It was then ascertained that she had received an injury, supposed to have been a fall on the knee, more than a year before, and had been lame and unable to put the whole foot to the ground ever since.

When I resumed the charge of my wards, a few days after the patient's admission, I found the girl able to go about, but very lame, and with well-marked signs of dislocation of the right hip on the dorsum ilii. The previous history being very uncertain, as obtained from the child herself and also from the friends through the doctor in the country, I was uncertain as to whether there had been disease antecedent to the first injury. As to the dislocation being of old standing I had no doubt. With the consent of the parents I decided to cut down on the head of the femur, remove it if it was diseased, return it to the acetabulum if possible if it was healthy, and in either case to do my best to obtain a straight limb for my patient. Accordingly, on the 25th October, one month after the patient's admission, assisted by Mr Caird, I cut down on the head of the femur where it lay on the dorsum of the ilium. We found no evidence whatever of recent injury. The neck of the femur was surrounded by dense muscular and fibrous adhesions. When these were cut through with some difficulty, we found the head of the femur apparently perfectly healthy, but without a scrap of ligamentum teres attached to it. On examining the acetabulum it was felt to be filled with what we took to be granulation tissue. It was not scraped. This, I now think, was a mistake. With a little gentle manipulation the head of the femur slipped into the



acetabulum. The girl's legs were then brought together and seen to be of the same length. The wound was irrigated, and stitched up with a rubber drainage-tube at the most dependent part, and continuous extension applied to the limb.

Most unfortunately the wound suppurated. The child did fairly well, except that a sinus remained where the drainage-tube had been placed. This sinus was found two months after the operation to lead to carious bone. The old incision was therefore opened up on 26th December, and the head of the femur removed in a carious condition. By the 27th March 1890 the wound was quite healed, the patient wearing a Thomas's hip-splint when up. On careful measurement the right leg is found to be half an inch shorter than the left, and the trochanter half an inch higher up and slightly more anterior on the right than on the left side. The natal fold is well marked on both sides. The right limb is almost as well nourished as the left. There is some power of movement of the right hip.

*Remarks.*—1. From the condition of matters found at the operation, the absence of all signs of recent injury, and the dense adhesions that existed, amounting to a new capsule for the head of the femur, I am certain that the dislocation was of old standing, and had occurred probably at the time of the first injury, more than a year before admission. This is confirmed by the statement of the parents, that the girl had walked on the toes of the right foot ever since that time.

2. From the absence of all trace of the ligamentum teres, the presence of granulation tissue in the acetabulum, and the immediate occurrence of carious disease in the head of the femur on its return to the acetabulum, I consider that disease of the hip-joint (acetabulum) preceded the dislocation, and tended to make the production of this injury, which is so uncommon in children, more easy. I was prepared to find this result, for Dr Henry Alexis Thomson had drawn my attention to the cases published by König, who says:—"Dislocation in tubercular disease of the hip usually depends on osseous coxitis, especially of the acetabulum. It occurs under slight injury, and the femoral head travels in the same directions as in traumatic dislocations. A blow on the knee, or the weight of the bed-clothes, may be sufficient. In most of my cases the acetabulum had become partly filled up with tubercular granulations. The ligamentum teres is always destroyed" (from notes by Dr H. A. T.) König's treatment of such cases is to excise the head of the femur, even though it may seem to be quite healthy. He has published three cases similar to mine, in two of which the head of the femur seemed to be healthy, and in all the acetabulum was diseased.

#### IV.—NOTE ON AN APPARATUS FOR STERILIZING STEEL INSTRUMENTS BY STEAM WITHOUT RUSTING THEM.

By CHARLES W. CATHCART, M.B., F.R.C.S. Eng. and Edin.; Lecturer on Surgery, School of Medicine, Edinburgh; Assistant Surgeon, Royal Infirmary, Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 4th June 1890.)

LAST summer (1889), while taking out a course of Bacteriology under Dr Woodhead, I was impressed with the use which he, as a bacteriologist, made of heat as a sterilizing agent, and also with the efficiency of steam in particular for this purpose. It then occurred to me that the sterilization of surgical instruments would be an additional protection against sepsis in wounds, especially in hospital practice. With reference to the value of steam, I may here quote the result of experiments by Koch, Gaffky, and Löffler, as given by Crookshanks in his *Manual of Bacteriology*, 2nd ed., page 159:—"Rolls of flannel with anthrax spores or earth spores, and a thermometer wrapped up inside, were subjected to steam, and the results compared with the effect obtained with hot air. Thus in hot air four hours' exposure to a temperature of 130° C.—140° C. brought the temperature inside the roll to 85° C., and the spores were not injured; on the other hand, exposure to steam under pressure at 120° C. for one and a half hours raised the internal temperature to 117° C., and killed the spores. By such experiments the superior penetrative power of steam heat was established. To test steam heat at the atmospheric pressure, water was boiled in a glass flask with its neck prolonged by means of a glass tube, the temperature in which was found to be uniform throughout. Anthrax and earth spores placed in the tube were found to be unable to withstand steam at 100° C. even for a few minutes. It was, therefore, concluded that disinfection by steam at atmospheric pressure was superior to hot air from its greater efficiency, and to steam under pressure from the simplicity of the necessary apparatus."

On inquiry I found that steam was not used for sterilizing fine steel instruments lest it should rust them, but that surgeons had already recognised the importance of sterilizing their instruments, and had used several other methods for doing so.

(1.) Boiling in water and immediately drying the instruments. This I tried, but found the instruments apt to rust. This method also involves considerable expenditure of time and trouble, while the after-drying partly obviates the benefit of sterilization.

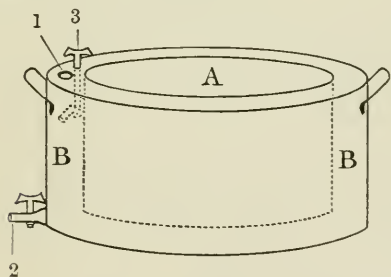
(2.) Heating for 20 minutes in a copper vessel containing glycerine or vaseline at a temperature of about 120° or 130° C. (248°–266° F.) This is recommended by Professor Poncet of Lyons.<sup>1</sup> It is no doubt effectual, but requires a somewhat expensive apparatus. Moreover, careful watching to regulate the

<sup>1</sup> See *Revue de Chirurgie*, August 1889.

temperature would be necessary, as the boiling point of the liquids used is given at  $280^{\circ}\text{C}$ . ( $526^{\circ}\text{F}$ .), a temperature which would damage the temper of steel.

(3.) Sterilizing with hot air. Dr Martin of Berlin has introduced a sterilizer, for this purpose, of double plates of galvanized iron, with a lining of asbestos between them. Apart from the inferiority of hot air to steam as a sterilizer, and of the need for constantly regulating the temperature, this apparatus requires two men to lift it, and costs about £5.

On the grounds of efficiency, and of economy of time, trouble, and money, therefore, it seemed well worth while to try to overcome the risk of rust in sterilizing steel instruments by steam. Working on the statement of chemists, that rust only occurs when iron or steel is exposed to moisture in the presence of carbonic acid, I began by experimenting with various absorbents of carbonic acid. Not being satisfied with my results, I applied for advice to my friend Dr J. S. Haldane of the Physiological Laboratory, Oxford, who has lately been testing the amount of carbonic acid in the atmosphere, and who had devised special methods for its absorption and estimation. In his reply he kindly gave me among others two specially valuable suggestions, by means of which I have succeeded in doing what I wanted. One was to prevent the deposit of vapour on the instruments by heating them to boiling point before the steam was allowed to reach them, and by rapidly drying them afterwards. The other was to drive out all carbonic acid from the steam by boiling for some minutes before allowing it to reach the instruments. A few experiments showed me the value of these suggestions.



Both of them can easily be fulfilled simultaneously by a simple piece of apparatus which a tinsmith has made at my direction. An oval tin pot (A) like a fish-kettle, and measuring 16 inches long, 9 inches broad, and 6 inches deep, is surrounded on all sides, except at the lid, by a similar larger vessel (B), 1

inch of space being left between them. The outer compartment (B) is provided with (1) a hole for filling in the water, which can be plugged by a cork; (2) with an exit tap for emptying, and (3) with a stop-cock near the top, which opens and shuts communication with A. A has a tightly fitting lid.

The instruments to be sterilized are placed in A. They may either lie on the bottom or be in glass tubes or metal boxes. The lid of A is shut down and water boiled in the outer vessel (B) by a bunsen burner or on the fire. At first the steam is allowed to

escape for the double purpose of dry-heating the instruments and of driving off the carbonic acid from the water. In ten or fifteen minutes the stop-cock is opened between A and B, and the filling hole in B plugged with a cork. Steam rushes into and fills A and escapes at crevices round the lid. The instruments can in this way be steamed for as long as is required, after which the stop-cock is turned off again and the lid taken off. The steam at once escapes and the instruments are found dry and free from any trace of rust. The smaller boxes containing instruments will have some vapour condensed on the inside of their lids, and there only, because the cold air from above cools the lids first. After the lids have been wiped dry on the inside, the rest of the boxes and their contents will be found to be dry also. The instruments free in A will be quite dry.

Since surgical instruments are steeped in antiseptic lotion before being used, the possibility of contamination by exposure to the unfiltered air after sterilization may be neglected. If, however, it were desired to have instruments perfectly protected, it could be done by using plugged test tubes, or by surrounding the small boxes, or rather the junction of the lids, with cotton-wool charged with some absorbent of carbonic acid. As the interior of the box or tube cooled the entering air would be freed of organisms by the cotton-filter, and of carbonic acid by the chemical absorbent of that gas. Ordinary washing-soda or carbonate of soda,<sup>1</sup> powdered dry into the wool, has proved efficient in my hands hitherto, to prevent rust when I wished to leave instruments undisturbed for twenty-four hours or longer after sterilization. The wool gets damped by the steam, which thus apparently dissolves up sufficient of the soda. It is right to say, however, that where the protection by the soda has been omitted rusting has not always occurred. Where I have sterilized knives in plugged test-tubes, vapour condensed on the insides of the tubes, but gradually dried off in a few hours without doing any harm, unless the steel touched the glass at a place where it was wet.

During the steaming, some vapour condenses on the inside of the lid of A in spite of its being protected by a felt cover on the outside, and sometimes the condensed water drops on to the instruments or boxes below as the lid is being taken off. It can of course be at once wiped off, but is a disadvantage. To obviate this inconvenience I have fixed to the under side of the lid a piece of lint, which catches any drops that fall. Hooks are fastened at either end of the downward projecting lip of the lid. Strings through these fasten the sheet of lint to the lid.

Half a gallon of cold water in my sterilizer takes about half an hour to come to the boil with an ordinary bunsen burner. This quantity takes about two hours to boil down after it has reached the boiling point.

<sup>1</sup> Soda lime would probably be better.



## V.—A CASE OF INFLUENZA AND APHASIA.

By THOS. DOBSON POOLE, M.B. Edin.

WHILE taking charge of the practice of Dr Kebbell, the following case, which may not be devoid of interest, came under my notice.

Mrs W., age 27, lives in a small low-lying village. Family history good; her mother and sisters are healthy. Her father died of dropsy apparently of a hepatic nature. She has had usual diseases of childhood and has had five children. About three weeks prior to present illness I attended her at her confinement, which was normal—except, perhaps, that I was obliged to rupture the membranes. Two days after, temperature was 100°, which I attributed to the breasts. This soon subsided, and in eight days she was up and well.

On April 11th she was cooking in a small room without a fire, while a current of cold air was playing on the left side of her face. Soon after her dinner she was seized suddenly with shivering, giddiness, and violent frontal headache. Her friends asked her how she was, and she said, "I don't know, I feel queer," and pointed to her head. They gave her brandy and put her to bed, and soon after noticed that she had lost the power of speech, and fancied that she was suffering from a stroke. In the evening they rubbed oil over the left side of the face and temple, which they thought was swollen. The following morning I saw her; found her in bed; face pale, but her lips were not so pale in comparison. When asked how she was, she pointed to her head. When I spoke she seemed confused, and appeared to be unable to understand a question unless it was repeated. She would make an effort to speak, and after fixing her eyes, would say, after the lapse of a moment or two, "Yes," which sounded as if it had a mark of interrogation after it. The word "yes" was about all she could say. Temp. 100°·2. Pulse quickened and weak. A saline mixture and some quinine powders were administered. Took the yolk of an egg with a little brandy several times a day.

Next day I saw her, and she seemed to understand all that was going on. Could say the word "better." Examination fatigued her. Temperature 100°, and she complained of headache (frontal) by pointing to the head. Next day condition improved; more composed. Could say the words "yes," "no," and "better." Temp. 99°. Two days after (16th) I asked her how old she was, when her sister, who was in the room, said "twenty-seven," and then the patient said, "Yes, twenty-seven." When asked where her head ached, she pointed to the left temple and said "There." She answered better when two or three questions were asked at the same time. I asked her to read, but she shook her head, smiled, and said, "I know it." It appeared that she understood the meaning of printed words but could not read aloud. She cannot write. When asked how many children she had, she said "Four," and

pointed to the one in the bed, as if to say, "Four and this one." Can name all her children except one, to whom she persists in giving a wrong name. Could not name her sisters or her nurse. Could say reflexly such expressions as "Go away," "No, you don't," etc. Temperature normal, as are the rest of the systems. I was able only to watch the case so far.

In a letter dated May 9th, Dr Kebbell kindly wrote to me:—"Mrs W. is improving, is downstairs; can now call all her children and husband by name. Last Saturday she read from the newspaper to me the prices of eggs and butter. She complains still of headache."

I may mention that influenza in its various type was prevailing in the district, and that a woman nursing Mrs W. was suddenly seized with epigastric pain, vomiting, bloody diarrhoea, pains in back and limbs, and headache, and who recovered under treatment in three days.

The case illustrates that there are several centres connected with the mechanism of speech. What was the tangible condition of the speech centres is difficult to say. The face was pale, but it can hardly be inferred from this that there was anæmia of the centres.

It was a remarkable fact that the patient could not say the names of her sisters and nurse, but was able to say the names of her children (except one). It would appear that in some aphasic conditions, when the power of saying names or nouns was returning, patients are able to speak those names which they have learnt most recently.

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## VI.—NOTES ON HEART DISEASE IN PREGNANCY AND LABOUR.

By G. OWEN C. MACKNESS, B.A. (Oxon.), M.D., Broughty Ferry.

(*Read before the Obstetrical Society of Edinburgh, 11th December 1889.*)

THE subject of heart disease complicating pregnancy has lately on more than one occasion occupied the attention of our Society. In October 1887 Dr Berry Hart read a paper on mitral stenosis as a complication, giving at the same time the reports of two cases which had been under my own care; while on the same date Dr Ballantyne fully recorded another similar case. Three other cases were recorded by Dr Berry Hart in May 1889, and one by Dr Fraser Wright in last July. The subject is of such importance that I need hardly apologise for relating at some length the following case, which was treated in the Edinburgh Maternity Hospital during the time that I was Resident Physician. The case, which was under the care of Dr Halliday Croom, to whose kindness I am indebted for permission to lay these notes before you, was one of pregnancy complicated by aortic stenosis and incompetence, together with mitral stenosis and incompetence.

Jane C., aged 24, i.-para.

*History.*—Her mother is still alive and well; no history as to father. When about 10 or 11 years old she had scarlet fever and measles, followed immediately by small-pox; from these she recovered well. She does not know that she has ever had rheumatic fever, but has suffered at times from pains in her wrists. She has always been fairly strong, but as a general servant she has done a great deal of hard work. About two or three years ago she noticed that her feet were swollen at nights; this condition, however, passed off without treatment. At the end of 1886 she began to be troubled with shortness of breath and palpitation on making any exertion. In the beginning of January 1887 she caught a cold which kept her in bed for a day; there were no special pains in the joints. She last menstruated on 9th January 1887. About this time she had severe pain in her left side, which soon improved; but in the beginning of April it returned, and she was admitted into Dr Affleck's ward, Royal Infirmary, Edinburgh, on 8th April, complaining of shortness of breath and pain in her left side, the pain being shooting in character and often passing up into both shoulders. At the time of her admission into the Infirmary she suffered a great deal from giddiness, with pains in her head. She never had any morning sickness.

I am indebted to Dr Affleck's kindness for the following notes of her condition while in his ward:—

*Circulatory System.*—Pain severe in left mamma; slighter pain on inner side of right mamma; slight palpitation; dyspnoea, especially at night; visible pulsation in episternal notch and beating of carotids; apex beat in fifth interspace, about 2 inches from sternum, feeble, and with no thrill; slight thrill between second and third interspaces; slight thrill in episternal notch. Heart not enlarged. Over mitral area the first sound is replaced by a soft blowing murmur, which is propagated round to the axilla. Over aortic area systolic and diastolic murmur heard, harsher and more prolonged than mitral; murmurs conducted up vessels and down sternum. Pulse 80, and regular. Respiratory system normal. At the end of April there was some oedema of the feet on standing. She was treated with digitalis, iron, and arsenic. On 1st May sickness after every meal commenced; on 10th May stirrage was first felt; on 13th May she had epistaxis; on 22nd July she had irregular pains over the abdomen, together with difficulty in micturition; on 24th July she was in bed with a painful swelling and ecchymosis in the upper part of the left thigh, and with severe vomiting. On 25th May there was some hæmatemesis. She was now put upon milk diet, the digitalis mixture stopped, and she was ordered bismuth and opium powders, with  $\frac{3}{4}$ ss. of brandy every four hours; warm opium fomentations were applied to the thigh. On 28th July the pain and ecchymosis were disappearing. From this time until 15th September, when she was sent to the Maternity

Hospital, she had occasional hæmatemesis; extreme prostration and also sleeplessness at night; she vomited three or four times a day for two or three days at a time, with intervals of a week or two, during which she was better. She at times had some slight hæmoptysis, and often required to sit up in bed in order to breathe at all. Her condition all this time was most critical.

After admission to the Maternity Hospital on 15th September her condition improved considerably; she was kept on milk diet, and treated with bismuth and opium;  $\frac{3}{4}$ ss. of brandy was given three times a day. She had no further sickness except once after taking castor-oil. She was rarely troubled with breathlessness except at nights now and again. The opium was gradually diminished in quantity, and the brandy was stopped for a time while she was also allowed a little solid food. Dr Byrom Bramwell examined the condition of her heart, which he found to be only slightly enlarged; the apex beat was displaced outwards (probably by the uterine tumour); over the mitral area was a distinct pre-systolic murmur, together with a slight systolic murmur which was conducted towards the axilla; over the aortic area were heard systolic and diastolic aortic murmurs, the systolic being very well marked. These were conducted up the vessels and down the sternum.

On 5th October she got up for an hour, and continued to do so on most days after this. On 14th October she complained of pain in her back and left side; also a little sickness. On 15th October pains still continued; considerable dyspnœa during the night. These pains passed off, but recommenced at 11.30 P.M. on 18th October, when the breathing also became extremely troublesome. On 19th October she was much better; the bismuth and opium were stopped, and she was ordered  $\mathfrak{M}$ 5 of tr. of strophanthus (1 to 20) every four hours. On 23rd October it was determined to try and bring on the labour, as she was already a week past her time, and was becoming extremely nervous lest the new quarter, bringing with it fresh doctors and nurses, should arrive before she was well on the road to recovery. Consequently, at 11.30 A.M. on that day under chloroform I separated the membranes for about 1 inch round the cervix with my finger and gave a hot douche. A large Barnes' bag was then placed in the vagina, and only removed in order to give a hot douche every four hours. No pains resulted from this. On 25th October, at 1 P.M., Dr Croom, with some difficulty without chloroform, passed a large-sized bougie for about  $1\frac{1}{2}$  inch between the posterior wall of the uterus and the membranes; a hot douche was then given every four hours. Early on 26th October the pains began, but were feeble and useless at first. During the evening and night of 26th October she had frequent pains, and became extremely hysterical. Chloroform was given during most of the pains. She complained of severe stabbing pain, especially during the labour pains, in the precordial region and passing up into the left arm.



During the pains the pulse became more rapid, and much weaker and less regular; between the pains it was about 90, full and regular. She continued in this state all night and during the whole of the next day, the os dilating very slowly. She was given ℥5 of tr. of strophanthus every four hours, and ℥ss. of brandy every three hours, with beef-tea at frequent intervals.

At 5 P.M. on 27th October 25 minims of tr. of opium were given, but she vomited it at once. She was becoming extremely weak and exhausted, while the difficulty in breathing was so great at times that she had to sit up in bed in order to breathe at all. At 7.40 P.M., when the os was the size of a crown piece, the membranes spontaneously ruptured high up, and a certain amount of liquor amnii escaped. At 9.40 P.M. Dr Croom saw her, and advised that the labour should be ended at once. She was then put deeply under chloroform, and after dilating the os with the fingers I applied forceps, and delivered the child shortly after 10 P.M. The placenta was expressed ten minutes after, and she was then allowed to come out of the chloroform, during the administration of which she had been extremely sick. No ergot was given, as a certain amount of hæmorrhage was thought desirable; there was a good deal of bleeding, which had to be checked later by hot douches. After delivery the pulse was 118, and fairly full; half an hour later it was 96, full, and regular. She was very sick for some time, and complained of sore throat; the precordial pain had entirely gone, and never reappeared. The child was a healthy male, 23 inches long, and weighing 9 lbs. 10 oz., being the largest child born in the Maternity during the quarter. The puerperium was perfectly normal. She was not allowed to nurse her child; there was no trouble with the breasts, as she had very little milk. She was kept on the strophanthus until 29th October, when the dose was reduced to ℥4 every four hours; on 31st October it was further reduced to ℥2. Her breathing was perfectly easy now, and recovery was rapid and uninterrupted. On 7th November she was sent back to Dr Affleck's ward, where the report of her cardiac condition was given as follows: A distinct precordial thrill exists; over the mitral area the first sound is preceded and replaced by a murmur which is conducted into the axilla; the second sound is impure; over the aortic area both sounds are replaced by murmurs which are conducted up the vessels and down the sternum. After a short stay in this ward she was dismissed in fairly good health, but after undertaking the duties of a domestic servant she again broke down; a short rest, however, soon restored her to comparative health, and when I last saw her, about fifteen months ago, she was able to undertake light domestic duties.

(A series of pulse tracings were taken before, during, and after labour, and a few of the more typical of these were shown, in order to give some indication of the condition of her circulation.)

In all the cases which have been recently brought before the

Society the cardiac lesion has been only at the mitral orifice; in this one, however, the main lesion was probably at the aortic orifice, although the mitral valves were at the same time stenosed and incompetent, so that the case forms a fitting and interesting addition to the series. The case is a remarkable one, in that there were numerous and extensive cardiac lesions before the commencement of pregnancy; and it was interesting to mark the increase of existing symptoms and the development of new ones as pregnancy advanced and an extra strain was thrown upon the already overtaxed heart, which, however, rapidly regained its former condition as soon as the labour was completed. When in Dr Affleck's ward she was for a time in a most critical condition, and it seemed almost as if she were bound to die from exhaustion consequent upon the persistent vomiting; yet she recovered from this, and the interesting point is, that not only did premature labour not supervene, but that she even went beyond the ordinary period of pregnancy.

It is generally said that mitral stenosis is the most dangerous heart lesion which can occur as a complication of pregnancy, and that the other lesions are dangerous to a much less degree. The explanations of this are far from satisfactory, and have been fully discussed by Dr Angus Macdonald in his work on *Heart Disease in Pregnancy, etc.*, so that it is unnecessary to refer to them further here. The purpose of this paper is to try and show that the great cause of danger is venous congestion, systemic and pulmonary, and that, since this is produced in the early stages of mitral disease, especially mitral stenosis, therefore this is the most dangerous lesion; but that, since it also appears in the later stages of aortic disease, therefore these become equally dangerous in the later stages, although they are less so when the disease is not so far advanced; in other words, the danger of heart disease as a complication of pregnancy and labour depends more upon the *extent* of the lesion than upon its *nature*.

In order to establish the truth of this proposition it will be necessary shortly to consider,—1, the effects of pregnancy and labour on the normal circulation; 2, the effects of the various heart lesions on the normal circulation; and, 3, how these effects interact on one another.

1. During pregnancy there is increased peripheral resistance, due to the circulation of the blood in the placenta, but this is met normally by a slight hypertrophy of the left ventricle of the heart. During the first stage of labour the pains probably cause an increased strain upon the heart, while its action will be weakened to some extent by the exhaustion which follows from the acute physical suffering. During the second stage of labour, however, the bearing-down pains come into play, and the patient, shutting her mouth, presses with all her abdominal muscles, so that there is considerably increased strain upon the heart and some embarrassment of the pulmonary

circulation, while the venous portion of the systemic circulation becomes more or less engorged, so that the right side of the heart tends also to become engorged with blood; this must be obvious to any one who gives the question any consideration, and needs no further explanation. During the third stage of labour, as soon as the placenta is separated and expelled, the uterus contracts firmly, and drives the blood suddenly from the uterine sinuses into the abdominal veins, which expand to receive it until the heart can adapt itself to the altered condition of the circulation.

2. We must now shortly consider the main effects of the various heart lesions on the circulation. Mitral stenosis, by preventing the ready passage of the blood from the left auricle into the ventricle, causes engorgement and dilatation of the former; this raises the pressure in the pulmonary veins, and so causes cedema and congestion of the lungs; the backward pressure reacts further on the right side of the heart, and causes dilatation of the auricle and ventricle, so that the systemic veins which open into the right auricle become over-distended and engorged. At the same time the left ventricle receives less than its proper quantity of blood, and in consequence atrophies to some extent. Here, then, the most important results are engorgement and over-distension of the systemic and pulmonary veins, and this condition of affairs coming on very early in the disease, becomes more marked as it progresses.

Mitral regurgitation produces the same sequence of events, due in this case to the blood being forced back on the lungs by the incompetence of the mitral valves; the results, however, do not appear so early in the disease as in the former case, but eventually become equally marked. The left ventricle, however, tends rather to hypertrophy than to atrophy.

Aortic lesions, on the other hand, produce diminished forward rather than increased backward pressure, but sooner or later they come to produce this latter effect also; here, too, the left ventricle hypertrophies.

We see, therefore, that all heart lesions come eventually to cause venous engorgement, but that, while mitral stenosis produces it at once, mitral incompetence does not produce it until the disease has been in existence for a rather longer period, and aortic lesions do not produce it until they have been in existence for a considerable time, and have come to produce increased backward rather than diminished forward pressure, which is their primary effect.

3. We have now to show how it is that pulmonary and systemic venous engorgement produce such dire results in pregnancy and labour. We have seen that pregnancy throws an extra strain upon the heart; if, however, this organ is already weakened by disease, it is unable to withstand this strain, and its action becomes more embarrassed, hence all forms of heart disease are dangerous; but if the disease is not far advanced the heart may, by suitable treatment,

be brought to perform the work required of it. In mitral stenosis, however, we have seen that the left ventricle tends to atrophy, while its muscular fibres also degenerate, and hence this disease is especially dangerous, more especially as it is now a well-recognised fact that in this lesion, owing probably to the above-mentioned degeneration, the heart does not react at all readily to cardiac tonics, such as strophanthus, digitalis, etc. In mitral incompetence and aortic diseases there is already more or less hypertrophy of the left ventricle, according to the extent to which the disease has advanced, and hence the question as to whether the heart can undertake the extra strain thrown upon it by the increased peripheral resistance depends entirely upon the extent to which the disease has advanced.

Abortion is very likely to occur as a result probably of venous engorgement and consequent defective placental circulation, and hence it may occur in any of the heart lesions where this condition of affairs exists.

If labour comes on, during the first stage the heart is very apt to fail owing to the exhaustion of the patient, and its occurrence depends entirely upon the amount of reserve energy left in the organ, *i.e.*, on the extent to which the disease has advanced. The defective action of the heart, moreover, tends to increase the venous engorgement which already exists, and hence pulmonary embarrassment is very much increased.

During the second stage of labour, the bearing-down pains tend naturally to cause the venous engorgement and to embarrass the heart's action. These effects are normally of trifling importance, but when they already exist as a result of heart disease they become a great element of danger, and the heart often fails from engorgement of its right side and inability to drive the blood through the pulmonary circulation. Here, then, the great source of danger is the venous engorgement which is superadded to that normally produced by the bearing-down pains.

When the placenta is born, we have seen that the blood from the uterine sinuses is suddenly thrown into the abdominal veins, which expand, and so prevent the right side of the heart from becoming overdistended. If, however, the abdominal veins are already overdistended, they can no longer expand further, and hence the extra blood is thrown into the right auricle, which becomes still further distended and paralyzed.

We see, therefore, that the great danger in heart disease during pregnancy and labour is due to venous engorgement, and since this engorgement occurs in all heart lesions, therefore the danger is present in them all. We have seen, however, that mitral stenosis, when slight, produces this condition, while mitral incompetence must be more marked, and aortic disease even more so than mitral incompetence before it appears; in other words, while all the various heart lesions produce the condition, its appearance



depends on the extent to which each one has advanced, so that we may say that the danger in heart disease depends rather on the *extent* of the lesion than on its *nature*.

No mention has been made of certain other accidents which may occur during pregnancy in heart disease, viz., the growth of fresh vegetations or the supervention of ulcerative endocarditis, since these may occur equally in all the lesions, and do not concern the point which I wish to bring out to-night; neither have I considered those cases where death occurs later on during the puerperium from pulmonary complications, since these belong to an entirely different category.

A few words may be said as to the treatment of these cases, and in the first place as to the use of cardiac tonics. These should be avoided as long as possible, and never be used until there are evident signs of failure of compensation; before this appears careful diet, moderate exercise, and the use of iron and arsenic are all that are required. As soon as compensation threatens to fail cardiac tonics act well as a rule (except in certain cases of mitral stenosis, where they often have no effect); the best of them is, perhaps, strophanthus in small doses (*e.g.*,  $\mathfrak{M} 2\frac{1}{2}$  of the tincture every four hours). It must be remembered, however, that prolonged use of these drugs after compensation has been restored tends to do serious harm, since the hypertrophy of the heart which they produce is followed by degeneration of its muscular fibres. The dose may be increased if necessary, and then gradually diminished again until eventually it may, perhaps, be discontinued altogether for a time. Strophanthus is especially useful where there is continued vomiting due to gastric congestion, and its own tendency to produce sickness may be counteracted by giving it with tr. cardamom co. If the venous congestion become very marked during pregnancy or labour, bleeding may in some cases give relief, at any rate for a sufficient time to enable the labour to be completed, and so allow the heart to again regain its power. Nitrite of amyl might, perhaps, be of use here just as it was found useful by Dr Fraser Wright during the third stage of labour. Since the bearing-down pains tend to increase the venous engorgement, chloroform should be given as soon as ever they appear, and the second stage of labour should be reduced to the shortest possible time; the administration of chloroform should be continued until after the placenta has been delivered.

When Dr Wright brought under the notice of the Society the case where he used nitrite of amyl in the syncope which followed the delivery of the placenta, some difficulty was found in understanding how it could relieve the engorgement of the heart. The following explanation seems to me, however, to be a reasonable one: the sudden delivery of the placenta causes, as we have seen, an extra amount of blood to be thrown into the right side of the heart, since the abdominal veins are already over-distended; nitrite of amyl dilates the

arterioles and lowers the blood-pressure, so that more blood would tend to pass into the systemic veins, and thus engorge the right side of the heart still further. The veins, however, are already overdistended, so that no more blood can enter them, and hence no harm can be done thus by the drug; but at the same time the nitrite of amyl dilates the *pulmonary* arterioles as well as those of the systemic circulation, and hence the flow of blood through the pulmonary vessels is made easier, and the right side of the heart can empty itself, and gets relief. Hence we see that the important action of the nitrite of amyl in these cases is upon the pulmonary, and not upon the systemic arterioles.

## VII.—REPORT OF THE ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL, FOR THE QUARTER ENDING 31ST JULY 1889.

By ALEXANDER KEILLER (Junior), L.R.C.P. & S.E., and W. G. AITCHISON ROBERTSON, M.B., C.M., B.Sc.

(Read before the *Edinburgh Obstetrical Society*, 12th March 1890.)

(Continued from page 34.)

### EXTERN CASES.

During the quarter ending 31st July 1889, there were 177 cases delivered at the patient's own home.

This number is made up of 24 primiparæ and 153 multiparæ.

#### *Primiparæ*, 24.

*Ages*.—Minimum, 17; maximum, 43; average, 22·29 years.

*Presentation*.—Vertex, 24.

*Position*.—Left occipito-anterior, 20; right occipito-anterior, 1; right occipito-posterior, 2.

*Classification of Labours*.—Natural, 19; laborious, 2; preternatural, 0; complex, 2; abortion (3rd month), 1.

*Infants*.—Male, 13; female, 10.

#### *Multiparæ*, 153.

Of these there were 25 who were ii.-paræ; 21 were iii.-paræ; 23 were iv.-paræ; 9 were v.-paræ; 15 were vi.-paræ; 21 were vii.-paræ; 17 were viii.-paræ; 9 were ix.-paræ; 7 were x.-paræ; and 6 were xi.-paræ.

*Age*.—Minimum, 20; maximum, 45; average, 30·32 years.

*Presentation*.—Vertex, 139; breech, 3; transverse, 1.

*Positions*.—Left occipito-anterior, 133; right occipito-anterior, 3; right occipito-posterior, 2; left sacro-anterior, 3; right acromio-anterior, 1.

*Classification of Labours*.—Natural, 137; laborious, 2; preternatural, 1; complex, 2; abortions, 11.

*Infants*.—Male, 91; female, 54.

*Details of the Cases.*

*Instrumental Labours.*—Forceps were used in four cases, twice for inertia uteri, once for right occipito-posterior position of head with slight contraction of the brim, and once for simple long delay in the second stage.

*Preternatural Labour.*—This was a pelvic presentation in the first position. The child was premature and dead-born.

*Complex Labours.* Two of these were cases of twins. One was a transverse presentation with prolapse of the cord, and the fourth, a right occipito-posterior case, was complicated with heart disease in the mother, and which proved fatal to her.

One of the twin cases happened in a primipara of 17 years of age. She suffered from slight septic poisoning for some days, but the temperature was gradually reduced by the use of corrosive sublimate douches and quinine internally. Both children were born alive.

The second case of twins was in a multipara. The first child was born naturally, while the second presented transversely. The second bag of membranes was ruptured and a leg drawn down, and the labour finished. The placenta was single, but there were two separate amniotic sacs. Both children were alive but very small, the second specially so.

*Abortions.*—One at  $2\frac{1}{2}$  months, six at 3 months, two at  $3\frac{1}{2}$  months, one at 5 months, and one at 6 months.

*Delay in the 3rd Stage* occurred in four cases. In one case the placenta was really adherent to the uterine wall, and required to be scraped off by the fingers. It was very fibrous, and the woman had suffered from localised pain in the right side of the uterus for some months previously (placentitis). In other two cases the placenta was merely retained in utero; while in one case it was found to be lying in the vagina.

*Peculiar Child.*—This was a premature child of  $6\frac{1}{2}$  months. The umbilical cord was only 2 inches in length, and so the child was closely connected to the placenta, which was expelled at the same time as the monstrosity. The lower limbs were badly developed and deformed. The anus was imperforate, and the sex quite indefinite. The abdominal viscera, bowels, liver, and stomach protruded through the abdominal wall (exomphalos). It lived five minutes. The patient had given birth to a healthy child previously.

In another case the child had single hare-lip extending round one side of the nose up to the eye, and also cleft palate.

*Mortality.*—(1.) Maternal, one, from cardiac failure. (2.) Foetal, 9.—Two were premature; one presented by the breech; one was a transverse presentation; four were syphilitic or with fatty degeneration of the placenta; one was putrid when born. (3.) Infantile, 7.—Five premature children lived only a short time, varying from

a few minutes to six hours. The twin children of the primipara both died, the boy having lived 5 days and the girl 7 days.

A few of the more noteworthy cases:—

*I. Case of Heart Disease; Death during 2nd Stage.*

M. B., aged 43, primipara. This patient was seen the day previous to her death. At this time she complained of severe pain at the lower part of the præcordia, and of flatulence, which she attributed to indigestion. She looked even older than what she stated her age to be. Her pulse was very weak and somewhat irregular. The first sound of the heart was muffled and impure, and the beat slow. The vagina was very narrow, and the os uteri difficult to reach, as it was high up, and the coccyx was firmly bent forwards. The os uteri was not at all dilated.

Labour pains came on next day. On arriving the patient was found lying unconscious in bed. Her breathing was very slow and characterised by shallow gasps. Per vaginam, the os uteri was fully dilated, the membranes ruptured, and the head low down in the pelvis; but the examination was very hurried, as the patient required immediate attention, for the respirations were becoming fewer, and they soon ceased altogether. The eyelids were widely open, and the eyeballs directed upwards, the pupils being contracted. Thirty minims of ether were injected, and artificial respiration commenced. The heart was beating very feebly at this time, but it soon ceased. Those in charge of the patient said that for some hours previous to her death she had remained in a semiconscious condition, and had only once or twice given a rational answer, usually paying no attention to questions, though she tried to bear down when urged to do so.

The result of a partial post-mortem examination made by Dr A. H. F. Barbour, was that death was due to fatty degeneration of the heart.

*II. Case of Transverse Presentation.*

Mrs M., aged 25, fourth pregnancy. On arrival the right arm of the child, together with a large loop of the umbilical cord, were found projecting through the ostium vaginae. The attendant said that this had been the condition for two hours. Pulsation in the cord had, of course, entirely ceased. By abdominal palpation the head was found to lie in the right iliac fossa, and the right shoulder was found to present at the os uteri. The patient having been anæsthetized, the hand was introduced alongside of the prolapsed arm, and the left foot of the child seized and drawn down, and on gentle traction being applied to it the breech was brought down, and then the head expelled by suprapubic pressure. The child had apparently been dead for several hours.



### III. *Abortion; Hour-glass Contraction, with Prolapse and Anteversion and Fibroid Tumour of Uterus.*

Mrs M. was delivered of a five months' child at 3 A.M. On arriving at 6 A.M. the placenta had not yet been expelled. Per vaginam the os uteri was found to be directed posteriorly, the body of the uterus lying forwards and fixed in this position. The anterior lip of the cervix was much thickened and enlarged, while the whole uterus was prolapsed. By gentle pressure above the pubis the uterus could be pushed down and the cervix easily made to project through the ostium vaginae. On steadying the uterus from above, two fingers could be introduced through the os externum, but only one could be with difficulty introduced through the internal os, which was greatly contracted and undilatable by the fingers. The placenta could be felt lying free in the body of the uterus, which was not contracted. Chloroform having been administered, the internal os was stretched by the fingers, but it was quite unyielding and resistant. Several hot douches were given, and fragments of the placenta were scraped away. At last a small portion of the placenta was washed through the contracted os internum by the stream of water. This was at once seized, and gradually the whole placenta was drawn through together with the membranes. This state of spasmodic stricture of the os internum was no doubt aggravated by a dose of liquid extract of ergot which had been given previously. On the anterior surface of the uterus could now be felt a rough, hard, subperitoneal or intramural fibroid tumour, which remained hard during the uterine relaxations, and even when fully contracted the uterus remained of the same size as the post-partum uterus at full term. In this patient we had, therefore, all these pathological conditions at the same time, viz.:—Hour-glass contraction of uterus with retained placenta, anteversion and prolapse with enlargement of the cervix uteri, along with fibroid tumour of the uterine wall.

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### VIII.—CASE OF CONGENITAL SPASTIC PARAPLEGIA, BILATERAL ATHETOSIS, AND MENTAL DEFECT.

By J. CHRISTIAN SIMPSON, M.B., Stoke-Newington, Late Senior University Resident Surgeon, and House Physician, Royal Infirmary, and Extra Assistant Physician, Royal Asylum, Edinburgh.

THE comparative rarity of the above condition, and the small and imperfect accounts which appear in ordinary text-books, induce me to record this case. It is a very typical example of the class of cases which have been variously called "double spastic hemiplegia," "bilateral athetosis," "congenital chorea," but I prefer the term "congenital spastic paraplegia." A large proportion of such

cases have a mental defect of greater or less degree, but there are a few in which the spastic paraplegia is the sole outstanding feature. In this case, as will be seen, all the three conditions of spastic paraplegia, athetoid movements, and mental deficiency are present in a typical manner, almost every point which Gowers mentions in his *Diseases of the Brain* being exemplified.

J. C., aged 12, is the eighth in a family of eleven, the rest of whom are healthy. Her mother was ill for about a fortnight before she was born, and the actual labour was a prolonged, though not an instrumental one. The presentation is unknown, and the child was still-born, only recovering after much exertion. Convulsions were almost at once noticed, and her eyes were said to have had a peculiar look. The arms were seen to be paralyzed when about five months old, and her neck and head were also noticed to be over mobile. The date of return of movement in the arms is unknown, as is also the time when any of the choreiform movements first appeared. These automatic movements are most marked in the arms and hands, specially on the right side.

She never tried to walk till after she was two years of age, but her progression was so imperfect that it was practically abandoned till a short time ago, when crutches were procured. The cause of the inability to walk appeared to be the tonic spasm of the legs, which crossed when any attempt to walk was made, and also the gradual development of double talipes equino-varus, more marked on the left side. The tongue has been thought to be somewhat large, and there is a slight tendency to the "slavering" of a "bulbar case." Swallowing is normal; appetite good; speech fair, though very backward. There have been no epileptic fits since the occurrence of infantile convulsions, but she occasionally wets the bed, and there is occasional incontinence of urine during the day if she laughs very much.

The mental condition is one of retarded or arrested development. She desires to go to school, is learning to read, but there is and has always been a considerable amount of "the vacant stare" and facility in being amused by trifles. Her general condition is seen to be very nervous, starting very readily. The bodily condition is good, and she is cleanly. The ordinary signs of puberty for a girl of her age are well marked. The systems other than the nervous and locomotory are normal, and need not be detailed. The examination of the nervous system is unfortunately imperfect, on account of her shyness of answering, or inability of comprehending all that is said to her.

*Sensory Functions.*—Subjective sensory phenomena appear to be absent, and her sensibility to the various forms of touch also appears to be normal. Muscular sense fair, as regards, say, a matchbox in the hands empty or full of stones. Special senses normal. Pupils equal, moderately dilated, react equally to light, doubtful as regards accommodation.

*Motor Functions.*—Organic reflexes are normal, except the occasional incontinence of urine. Whether this be the accompaniment of a nocturnal epileptic fit or not the mother is unable to say. Skin reflexes are all marked or exaggerated on both sides, for the most part equally. Tendon reflexes.—No ankle clonus can be produced on the left side on account of the talipes, but occasionally one or two clonic spasms are elicited on the right side, in which the talipes is not so marked. Front tap reaction is seen on the right side, doubtful on the left side. The tendo-Achillis reflex is present on both sides, but more marked on the right. Knee-jerk is marked on both sides, but there is no clonus of the patella on either side, probably due to the spasm of the extensors, which prevents any patellar movement. The deep reflexes in the arms cannot be obtained. Co-ordination is fair in the left upper limb, but the right arm is paretic and spastic to some extent, and the lower limbs are too spastic for results to be obtained. Automatic movements are markedly seen in the right forearm and fingers, also to a slighter degree in the left hand and in the toes of both feet. The facial muscles, specially the lower ones, are also affected, as well as an irregularly intermitting spasm of the right sterno-mastoid muscle. There is no constant blepharospasm.

*Vasomotor functions* appear normal. Temperature normal.

*Cerebral and Mental.*—Intelligence is fair, considering that she has only quite lately gone to school. She is learning to read, and is able to concentrate some attention. Her memory is said to be good. Speech so far is perfect as regards enunciation of simple words and letters, but she is very shy, and does not speak much. Sleep is good; occasional dreams; no headaches.

*Cranium* appears somewhat rounder than usual. Hard palate normal.

*Spine* normal.

*Locomotor System.*—Bones good, and normal in position, except the double talipes, which is more marked on the left side, the osseous displacement preventing reduction. Joints normal, except the ankles. Muscles.—Slight atrophy of the left calf muscles, and also of the right shoulder and upper arm muscles. Hypertrophy absent, except that the tongue is perhaps too large, and the lips certainly well marked. Spasm more or less constant in all the crural, extensor, and adductor muscles, and occasional flexion at the knees and hips. There is irregular intermittent spasm of the right sterno-mastoid muscle, which gives the patient a well-marked wry-neck. The biceps and the flexors of the forearm are occasionally spasmodically affected. There are no painful cramps nor permanent contractions except the deformity of the feet. There is no nystagmus nor fibrillary twitchings in the muscles.

*Voluntary Movement.*—Though patient at one time could walk a little without crutches, she is now unable to do so. With the aid of crutches she can progress, but the legs are of little or any use,

rather a hindrance, as they cross somewhat, and the talipes is also an obstruction. Besides the adductor spasm there appears to be some paresis below the knee, specially on the left side. When she sits the legs do not lie straight out, but become flexed at the knees, adducted, and feet crossed. When lying in bed there is frequently flexion at both hips and knees, the legs are crossed, and the voluntary power of extending and uncrossing them is slight and slow. Voluntary movements in the upper limbs are not so defective, but there is again the combination of some spasticity and paresis, specially in the right arm, so that the left arm has to aid the right in some actions, such as putting her hand to her head, or holding the right arm out for anything. The movements of the hands and fingers are fair, but are interfered with by the accessory automatic movements, which are most marked in the fingers of the right hand. The wrists are flexed, as also the fingers at the metacarpo-phalangeal joints, while they are extended, and even hyper-extended at the others, due to spasm of the interossei muscles. This is very typical of athetosis. The power of prehension is feeble, an article being taken hold of by the thumb and first and second fingers after a number of accessory movements; and the grip of it is also imperfect, it being rather a compression than a comprehension of it, due to the aforesaid spasm of the interossei overcoming the flexion of the fingers. She can move her head and neck, but, as before stated, the usual position of the head is one of wry-neck, due to spasm of the right sterno-mastoid and other cervical muscles.

To summarize—the patient is weak-minded in the ordinary acceptance of the term. She cannot progress without the aid of crutches. Voluntary movements in hands, arms, and legs are greatly impaired, she having to be dressed, undressed, carried to bed, etc. This want of voluntary movement is mostly due to spasticity, though there is slight paresis in some regions, and it is accompanied by involuntary or athetoid movements in the extremities. The neck is affected with torticollis. The eyes, though vacant sometimes, are not affected with nystagmus nor strabismus. Sensations and organic reflexes are normal, except occasional incontinence of urine, chiefly at night. There have been no epileptic fits—grand mal—since childhood, neither has petit mal been observed. Her general body condition is good.

*Remarks.*—The chief point of interest is one which at present cannot be made out with certainty, viz., the exact site or sites of the lesion.

The cause of the lesion was most probably the prolongation of the labour. In all likelihood, if forceps had been used, no injury to the cerebrum or meninges would have occurred, as it was not a first child, and all the children before and after this one are healthy. The lesion must have been an extensive double hæmorrhage on the cortex of the brain; but whether that was purely



meningeal, as is usually the case, or partly also from and into the brain substance, is doubtful. I think that both forms were present in this case, on account of the mixture of paresis with the true spasticity. The appearance of the dura mater is like that found in pachymeningitis hæmorrhagica interna in the adult, there being thickening and lamination of the blood-clot; by this time there will probably be some adhesions, cysts, or cicatrices. The principal site of the lesion is over the Rolandic and adjacent areas, bilateral, though somewhat asymmetrically distributed. Thus, on both sides, the areas for the senses of taste, smell, hearing, and sight, in their various forms, are probably normal. The injury to the prefrontal lobes, and to the areas for the various movements of the face, arms, and legs, is fairly equal on both sides, though the left brachial area is most likely more severely affected, as is shown by the greater amount of right brachial paresis—specially in the upper arm and shoulder region. On the left side there is probably not much serious injury to Broca's convolution, while the area for rotation of the head to the opposite side, viz., in front of those for the hip, shoulder, elbow, and wrist—according to Beevor and Horsley—is seriously affected, thus accounting for the well-marked torticollis. The convolutions above the calloso-marginal fissure, where there are also centres for the head, arm, and leg, will doubtless be considerably changed, with possible adhesion of the falx cerebri and thrombosis of the superior longitudinal sinus, in part of its extent. It is somewhat remarkable that, so far as can be tested, this patient's sensations and sensibility appear not to be much affected; but too much account must not be made of this, as her mental condition greatly impairs the accuracy of any delicate tests.

The whole appearance of such cases contrasts strongly with the cretin, in whom the base of the skull is supposed to be chiefly affected, premature ossification preventing development; while here it is on the vertex of the brain where the cause is. A cretinic idiot can readily be diagnosed, in a well-marked case, from a child the subject of idiocy from causes other than cretinism; and it is interesting that the hard palate, which in cretins is unusually highly arched, is normal in this case.

The occurrence of athetosis in these cases is of much interest, the more so when the site of the athetotic area is considered. This is said to be in front, and to the inner side of the area for hemianæsthesia, which, again, is behind the motor path in the internal capsule.

Athetosis is by far more frequent in the hemiplegia of children than of the adult, and though in the latter the lesion which is most frequently found is softening involving a part of the optic thalamus, it does not appear to be so limited in the case of a child, following any lesion in the motor regions, the lesion being almost invariably softening. This is usually more widespread than what results from an affection of an individual artery, where the lesion is, as a rule, in the adult more limited to

the distribution of the artery affected than in the child, except in the case of rupture and extensive laceration. And, along with this fact, account should be taken that the area for athetosis, the motor and sensory paths in the internal capsule, have each a separate arterial supply, though they are in such close proximity.

The method of involvement in cases such as this is probably the following:—Presuming that the presentation was cephalic, and that there was long and injurious pressure, the hæmorrhage would be most severe in the most vertical part of the cortex, containing the leg centres among others. This hæmorrhage would most probably be less severe lower down in the cortex, and therefore the forearm, face, and neck (*platysma*) centres are less damaged.

The fibres from the leg centres pass along the internal capsule nearest to the sensory fibres, and also nearest to the region associated with athetosis. The sensory fibres must also be affected in some way, as they are known by clinical facts to end in the cortex, part of which is the subject of this hæmorrhage.

Descending sclerosis occurs, as is evidenced by the motor condition, and doubtless there would be sensory defects if they could be detected. The sclerosis thus bounds the athetotic area on almost its whole outer side, and it is not too much to suppose that, to some extent, the cells are affected by radiating sclerosis to such a degree that though their function is not destroyed, it is perverted and athetoid movements are the result.

Another case, though it may admit of a different diagnosis, was a patient in Professor Annandale's wards last winter, and during the time of my residentship I had an opportunity of studying it. It was that of a man, A. G., aged 30, who came from Newcastle to see if any operation could be performed to enable him to walk, a feat which he had never yet accomplished. There is a history of a fall when about two years old, but the other symptoms, in my mind, point to a congenital cerebral, rather than a traumatic spinal lesion with any ascending tendency. In short, he cannot walk on account of contracture at the knee and hip joints, and strong adductor spasm, the former of the joint contractures being associated with marked and irreducible osseous deformity. He has had no treatment, so far as he is aware, except tenotomy of the hamstrings, which was performed in Nottingham Hospital in November 1887. This slightly improved his condition for a time, but the former contracture and dislocations recurred. He can give no information as regards his early life. His education has been neglected, as he cannot read or write, and his mental condition either primarily or consequently is dull, though at times he is irritable, positive, and insubordinate.

On admission, he was seen to be unable to walk. His general bodily condition was fair, though he was apparently not so big in body as the size of his arms would lead one to suppose he should have been. His arms were large and powerful, having been his chief aids to progression, but, withal, there was evident a weakness

and inco-ordination in performing finer acts, as in eating, etc., and occasionally there were athetoid movements in the fingers. The sensations in his legs were normal. Motion in the legs practically *nil*. Feet large, but no talipes of a permanent nature. Legs were somewhat atrophied. Permanent contracture with osseous displacement at both knees, and powerful adductor spasm with contracture at the hip joints, which could be undone to some extent. Slight athetoid movements in the toes were present. There was no cervical abnormality, neither could any sign of a previous spinal injury be detected. The deep and superficial reflexes in the legs were exaggerated where they could be obtained. Mental condition was poor, as before described.

Patient was deeply chloroformed, and his legs were still found to be very spasmodically contracted and adducted, while the osseous displacement rendered an approach to the fully extended position impossible. Tenotomy of the adductors was performed, but not much was gained by it, though considerable relaxation was obtained by the administration of conium, gelsemium, and physostigmine. This, however, was by no means sufficient to hold out any prospect of the after-treatment of an excision of the knee being able to be carried out.

The chief points in diagnosing this as cerebral rather than the result of the traumatism to the spine at the age of two are —

1st, The purely spastic paraplegic condition.

2nd, The absence of sensory disturbances or muscular atrophy, which could not be accounted for by inactivity.

3rd, The athetoid movements in the toes, and also, to a less extent, though accompanied with marked inco-ordination on voluntary movement, in the hands and fingers of both arms.

4th, The mental condition of the patient, which, however, was not so bad as is often the case.

If it had been due to a spinal injury and lesion, there would in all probability have been sensory and myotrophic changes. So far as I am aware, athetosis is only associated with particular lesions in the mesencephalon. The arms might or might not have been affected; but here again there is the tendency to athetoid movement and inco-ordination, any accompanying sensory disturbance, as in locomotor ataxy or diffuse sclerosis, being absent.

His mental condition may be the result of his never having been to school or taught, but it appears more like a primary deficiency from the one great lesion in his cerebral cortex producing at the same time the other conditions, than the result of no education and consequent non-development of his brain.

The inutility of surgical treatment in such cases is a striking contrast to the brilliant results which may be obtained in children who have never walked on account of paraplegia due to poliomyelitis anterior acuta. In these circumstances Professor Annandale recommends and practises excision of the knee in certain cases, combined with tenotomy and artificial supports where they are

required, and the results are most satisfactory. A brief note of a case in which this was performed may not be out of place in considering what, if any, surgical treatment should be recommended or could be satisfactorily carried out in the class of cases the subject of this report.

E. K. was a girl of 10, who was the subject of infantile paraplegia, the result of poliomyelitis anterior acuta. Her general development was fair. She was bright and cheerful, and mentally acute and active, though she had never walked, and has been deprived of much early education and mental development.

The condition of her legs on admission was as follows:—Both legs were considerably atrophied and almost completely paralyzed below the knees. There was marked talipes equino-varus affecting the left foot. The right foot was also the subject of a similar displacement to a less extent, and there was permanent contracture and crossed displacement of the leg at the knee, so that progression with crutches was impossible. She was thus reduced to the necessity of crawling along the floor as best she could. The other systems were normal.

This being the case, the more aggravated talipes was treated first by tenotomy and splint, and after that was seen to be satisfactory, excision of the contracted knee joint was performed. This was most successful, and no difficulty was experienced in healing by first intention. The ultimate result was, that patient could go about very well with crutches when sent to the Convalescent Home, having a firm, stable, and useful leg in place of the useless contracted limb, and with the aid of external supports the other leg could also be used in progression.

It is obvious that such treatment in the spastic variety of contracture could never be carried out, but it is interesting to note that such an operation as excision of the knee can be performed safely and successfully on a limb in a state of great malnutrition. Another striking instance of the same fact was seen in the case of a man who was the subject of very aggravated talipes, the result of poliomyelitis anterior chronica. He was most anxious for amputation to be performed, as he could not go about comfortably. Though he was in a fairly advanced stage of the disease, amputation at the ankle joint was performed, and the result left nothing to be desired either by the surgeon or the patient.

I must express my indebtedness to Professor Annandale for his kind permission in allowing me to make use of these three last cases, all of whom were under his care in the Edinburgh Royal Infirmary during the winter of 1888-89. They are necessarily brief, but serve to show the point of difference as regards surgical interference—which I was anxious to bring out—between paraplegia and contracture due to either cerebral lesion and secondary descending degeneration, or a primary spinal condition of the lateral columns, and paraplegia and contracture, the result of lesion in the anterior cornuæ.



# IX.—THE DISPOSITION OF THE PUBIC SEGMENT IN PREGNANCY AND IN LABOUR.

By J. C. WEBSTER, M.B., C.M.

(Read before the Edinburgh Obstetrical Society, 12th February 1890.)

MY reason for bringing forward this already much-discussed question is a twofold one. In the first place, considerable uncertainty has been raised in the minds of many regarding this subject, owing to the recent criticisms by Dr Symington and others of the view first brought forward by Dr Berry Hart, and for some years accepted as the correct one; and, secondly, I am able to present the subject in a new light, and to adduce new facts of the greatest value in solving certain points which have hitherto been obscure.

As to the change undergone by the pubic segment during labour, Dr Berry Hart, on the one hand, says in one<sup>1</sup> of his latest papers that "the pubic segment is drawn up in part into the abdomen during labour," and that though this occurs most markedly in the second stage it takes place also during the first stage; and he attributes this drawing-up to the upward tension of uterine retraction. On the other hand, Dr Symington<sup>2</sup> rather thinks that "the pubic segment is pushed downwards and forwards under the pubic arch," and that "the bladder is the only part of Hart's pubic segment that is not depressed."

During the last year I have been able, in conjunction with Dr Barbour, to study four *cadavera* in the following conditions:—

1. Pregnancy at the beginning of the eighth month;
2. Labour at the commencement of the first stage;
3. Labour late in the second stage;
4. Labour at the end of the third stage.

These were examined by means of frozen sections and casts.<sup>3</sup>

In regard to the disposition of the pubic segment, I have made a special study of these as well as of all the other cases previously published. I have arranged in tabular form the facts acquired by comparative measurements in regard to the following points:—

1. The pelvic floor projection and skin distance between the coccyx and the lower border of the symphysis pubis;
2. Change in the position of the urethral orifice;
3. Change in the position of the junction of the urethra with the bladder (base of bladder);
4. Thickness of the tissue between the lower margin of the symphysis and the vagina in line with the vertical axis of the former;

<sup>1</sup> *Obstet. Trans.*, vol. xiv. p. 66.

<sup>2</sup> *Ibid.*, pp. 61, 62.

<sup>3</sup> A full description of these by Dr Barbour and myself will be found in the *Laboratory Reports*, Royal College of Physicians, vol. ii.

5. The depth of the utero-vesical pouch of peritoneum ;
  6. The position of the os externum and os internum.
  7. Changes in the relation of the junction of urethra and bladder (base of bladder) and the cervix to the pubes and to one another.
- I have estimated these points in relation to the brim and the vertical axis of the symphysis.

TABLE I.—*The Pelvic Floor Projection and Skin Distance from Coccyx to Lower Margin of Symphysis.*

| Stage.             | Whose Section.           | Pelvic Floor Projection. | Skin Distance from Coccyx to Symphysis. |
|--------------------|--------------------------|--------------------------|-----------------------------------------|
| Nullipara,         | Average,                 | In.<br>1                 | In.<br>5·3                              |
| Pregnancy, 8th mo. | Barbour & Webster's,     | 2                        | 6½                                      |
| „ 9th mo.          | Braune's,                | 3¾                       | 10                                      |
| „ 9th mo.          | Waldeyer's, <sup>1</sup> | 2½ (about)               | 7½ (about)                              |
| First stage,       | Barbour & Webster's,     | 1¾                       | 6½                                      |
| „                  | Winter's,                | 2¼                       | 6½                                      |
| „                  | Schroeder's,             | 3½                       | 8¾                                      |
| „                  | Barbour's,               | 1¾                       | 5½                                      |
| Second stage,      | Braune's,                | 3½                       | 9¼                                      |
| „                  | Chiari's,                | 2½                       | 7¼                                      |
| „                  | Barbour & Webster's,     | 2                        | 6½                                      |

(In the other published sections the coccyx is not indicated, so that accurate measurements cannot be made.)

This table shows that the pelvic floor projection is greatly increased in pregnancy, that in the early part of the first stage there is scarcely any change, that in the first part of the second stage while the bag of membranes persists it is probably increased, and that later, while the head is low down it is diminished because of the coccyx being pushed downwards and backwards.

The following table shows that the urethral orifice in pregnancy is on a lower level, and considerably in front of the plane occupied by it in the nulliparous condition; that in the first stage of labour it is on a somewhat higher level, and that it is not anterior (probably slightly posterior) to the position occupied by it at the end of pregnancy; that during the second stage it occupies a still higher level, and that, while an abnormally long-persisting bag of membranes may cause it to appear scarcely moved at all backwards, in the more normal condition of the parts it is posterior to the plane occupied by it during the first stage.

<sup>1</sup> Owing to a fracture of the pelvis the parts are displaced slightly—probably downwards and forwards.

TABLE II.—*Change in the Position of the Urethral Orifice.*

| Stage.                          | Whose Case.          | Distance in Front of the Vertical Axis of the Pubes. | Distance below Brim.             | Distance below Lower Edge of Symphysis. |
|---------------------------------|----------------------|------------------------------------------------------|----------------------------------|-----------------------------------------|
| Nullipara,                      | Average,             | In.<br>$\frac{1}{4}$                                 | In.<br>$2\frac{1}{4}\frac{1}{2}$ | In.<br>$\frac{1}{4}$                    |
| Pregnancy, 8th mo. <sup>1</sup> | Barbour & Webster's, | $\frac{3}{4}$                                        | $2\frac{5}{8}$                   | $1\frac{1}{4}$                          |
| " 9th mo.                       | Braune's,            | $1\frac{1}{4}$                                       | $2\frac{3}{4}$                   | $1\frac{1}{4}$                          |
| " 9th mo.                       | Waldeyer's,          | $1\frac{3}{4}$                                       | $3\frac{3}{8}$                   | ( $1\frac{1}{2}$ )                      |
| First stage,                    | Schroeder's,         | 1                                                    | $2\frac{1}{4}$                   | $\frac{3}{4}$                           |
| "                               | Barbour & Webster's, | $\frac{3}{8}$                                        | $2\frac{1}{4}$                   | $\frac{5}{8}$                           |
| "                               | Winter's,            | $\frac{3}{4}$                                        | $2\frac{1}{8}$                   | $\frac{1}{2}$                           |
| "                               | Barbour's,           | $\frac{3}{4}$                                        | $2\frac{3}{8}$                   | $\frac{3}{4}$                           |
| Second stage,                   | Braune's,            | $1\frac{1}{2}$                                       | 2                                | $\frac{1}{2}$                           |
| "                               | Chiari's,            | ( $\frac{1}{2}$ )                                    | ( $2\frac{3}{4}$ )               | ( $\frac{7}{8}$ )                       |
| "                               | Barbour & Webster's, | $\frac{3}{4}$                                        | $2\frac{1}{4}$                   | $\frac{1}{4}$                           |

These facts are not in accordance with the theory of the pushing downwards and forwards of the pubic segment.

TABLE III.—*Changes in the Position of the Junction of the Urethra with the Bladder.*

| Stage.             | Whose Case.          | Distance below Brim.  | Distance behind Vertical Axis of Symphysis. |
|--------------------|----------------------|-----------------------|---------------------------------------------|
| Nullipara,         | Average,             | In.<br>$2\frac{1}{4}$ | In.<br>$\frac{5}{8}$                        |
| Pregnancy, 8th mo. | Barbour & Webster's, | $2\frac{1}{2}$        | $\frac{1}{2}$                               |
| " 9th mo.          | Braune's,            | $2\frac{3}{4}$        | $\frac{1}{4}$                               |
| " 9th mo.          | Waldeyer's,          | ( $2\frac{1}{2}$ )    | (Some distance behind it)                   |
| First stage,       | Schroeder's,         | $2\frac{7}{8}$        | $\frac{1}{2}$                               |
| "                  | Barbour & Webster's, | $2\frac{1}{2}$        | $\frac{5}{8}$                               |
| "                  | Winter's,            | $2\frac{3}{8}$        | $\frac{5}{8}$                               |
| "                  | Barbour's,           | $2\frac{5}{8}$        | $\frac{1}{4}$                               |
| Second stage,      | Braune's,            | $2\frac{1}{4}$        | (Just about in line with)                   |
| "                  | Chiari's,            | ( $1\frac{3}{4}$ )    | ( $\frac{3}{8}$ )                           |
| "                  | Barbour & Webster's, | $1\frac{3}{4}$        | $\frac{3}{8}$                               |

This table shows that the lowest part of the bladder, viz., the point of entrance of the urethra, is, during pregnancy, lower in the pelvis; that during the early part of the first stage it is scarcely altered in position (being neither raised nor pushed forwards), but that during the second stage it is considerably elevated.

<sup>1</sup> Bladder partly distended.

TABLE IV.—*Thickness of Tissue between Lower Margin of Pubes and Vagina in Line with the Vertical Axis of the Pubes.*

| Stage.           | Whose Case.          | Thickness of Tissue. |
|------------------|----------------------|----------------------|
| Nullipara,       | Average,             | In.<br>$\frac{5}{8}$ |
| Pregnancy, 8 mo. | Barbour & Webster's, | $1\frac{3}{8}$       |
| " 9 mo.          | Braune's,            | $1\frac{3}{4}$       |
| " 9 mo.          | Waldeyer's,          | $\frac{5}{8}$        |
| First stage,     | Schroeder's,         | $1\frac{1}{8}$       |
| "                | Barbour & Webster's, | $1\frac{3}{8}$       |
| "                | Winter's,            | $1\frac{1}{8}$       |
| "                | Barbour's,           | $1\frac{1}{8}$       |
| Second stage,    | Braune's,            | $\frac{1}{2}$        |
| "                | Chiari's,            | ...                  |
| "                | Barbour & Webster's, | $\frac{5}{8}$        |

This table shows that the thickness of this tissue is increased during pregnancy; and that during labour it is not increased, as it certainly would be, were there a pushing downwards of the pubic segment.

TABLE V.—*Depth of the Utero-vesical Pouch of Peritoneum.*

| Stage.                    | Whose Section.       | Distance below Brim.  |
|---------------------------|----------------------|-----------------------|
| Nullipara,                | Average,             | In.<br>$2\frac{1}{4}$ |
| Pregnancy, 8th mo.        | Barbour & Webster's, | $2\frac{3}{4}$        |
| " 9th mo.                 | Braune's,            | $2\frac{3}{8}$        |
| " 9th mo.                 | Waldeyer's,          | 1 (abnormally high)   |
| First stage, <sup>1</sup> | Winter's,            | $1\frac{1}{6}$        |
| "                         | Barbour & Webster's, | $2\frac{1}{4}$        |
| "                         | Schroeder's,         | $1\frac{9}{16}$       |
| " <sup>1</sup>            | Barbour's,           | $2\frac{1}{8}$        |
| Second stage,             | Braune's,            | Above brim            |
| "                         | Chiari's,            | "                     |
| "                         | Barbour & Webster's, | "                     |

This table shows that the utero-vesical pouch is lower in pregnancy; that it is not made to descend when labour commences, but is, on the contrary, elevated, *i.e.*, stripped upwards from the bladder, and that from a very early stage of labour.

<sup>1</sup> In these a little must be deducted to allow for the sinking of the peritoneum after the abdomen was opened—very little, however, as it was fastened in position before freezing.



TABLE VI.—*The Position of the Os Externum and Os Internum.**a. Os Externum.*

| Stage.             | Whose Case.          | Distance below<br>Brim<br>Anteriorly. | Distance below<br>Brim<br>Posteriorly. |
|--------------------|----------------------|---------------------------------------|----------------------------------------|
| Nullipara,         | Average,             | In.<br>$2\frac{1}{2}$                 | In.<br>$2\frac{1}{2}$                  |
| Pregnancy, 8th mo. | Barbour & Webster's, | $3\frac{7}{16}$                       | $3\frac{7}{16}$                        |
| " 9th mo.          | Braune's,            | $3\frac{5}{8}$                        | $3\frac{1}{2}$                         |
| " 9th mo.          | Waldeyer's,          | $2\frac{3}{4}$                        | $2\frac{3}{4}$                         |
| First stage,       | Schroeder's,         | $3\frac{1}{2}$                        | $4\frac{1}{2}$                         |
| "                  | Barbour & Webster's, | $3\frac{1}{2}$                        | $3\frac{1}{2}$                         |
| "                  | Winter's,            | $3\frac{1}{4}$                        | $3\frac{7}{16}$                        |
| "                  | Barbour's,           | $3\frac{1}{2}$                        | $3\frac{1}{2}$                         |
| Second stage,      | Braune's,            | $1\frac{3}{4}$                        | $3\frac{3}{4}$                         |
| "                  | Chiari's,            | 1                                     | $2\frac{1}{4}$                         |
| "                  | Barbour & Webster's, | $1\frac{1}{4}$                        | $1\frac{1}{4}$                         |

*b. Os Internum.*

| Stage.             | Whose Case.          | Distance below<br>Brim<br>Anteriorly. | Distance below<br>Brim<br>Posteriorly. |
|--------------------|----------------------|---------------------------------------|----------------------------------------|
| Nullipara,         | Average,             | In.<br>$2\frac{1}{4}$                 | In.<br>$2\frac{1}{4}$                  |
| Pregnancy, 8th mo. | Barbour & Webster's, | $2\frac{3}{4}$                        | $2\frac{3}{4}$                         |
| " 9th mo.          | Braune's,            | $2\frac{3}{8}$                        | $2\frac{3}{8}$                         |
| " 9th mo.          | Waldeyer's,          | Abnormally high                       | ...                                    |
| First stage,       | Winter's,            | $2\frac{3}{4}$                        | 3                                      |
| "                  | Barbour & Webster's, | $2\frac{3}{4}$                        | $2\frac{2}{3}$                         |
| "                  | Schroeder's,         | $3\frac{1}{2}$                        | 4                                      |

These tables show that during pregnancy the whole cervix is at a lower level than in the non-pregnant condition; that during the first stage, although the cervix is thinned and taken up (well marked in Schroeder's section), so that the os internum is moved farther away from the os externum, it is really at a lower level than before labour began. This is chiefly true of the posterior wall, where the taking-up is most marked; the tables show it to be on a considerably lower level. The anterior wall is only slightly depressed in its upper part, due to the pressure of the uterine contents on its softened structure. The lower level occupied by the posterior wall is due to the same cause plus greater thinning-out of it as well as of the posterior lower uterine segment.

The tables also show that during the second stage the os externum is higher in position. It is impossible to trace the os

internum during the second stage, as its position has not been determined in the sections.

It is to be noticed that the cases of labour which I have included in these tables are those in which the full time had been reached, and in which the head or breech presented. In Waldeyer's full time and in Barbour and Webster's eight-month pregnancy cases only did the breech present, but there is no reason to suppose that the measurements would differ to any extent from similar cases with the head presenting.

Saxinger's case of labour at the end of the eighth month I have not included, although in such a case it is most probable that the conditions are similar to those in a full time labour. An examination of his vertical mesial section gives us the following facts, viz. :—

1. The pelvic-floor projection is only  $2\frac{1}{2}$  in., while the skin distance from the coccyx to the lower margin of the symphysis is  $6\frac{1}{2}$  in.

2. The urethral orifice is at a higher level than in any of the other first stage cases, being about the same distance in front of the vertical axis of the pubes, and only  $\frac{1}{4}$  in. below the symphysis.

3. The point of junction of urethra and bladder is higher than in any of the other first stage cases, and nearer the pubes than in the majority of them.

4. There is less thickness of tissue between the lower margin of the symphysis and the vagina than in any of the others.

5. The utero-vesical pouch is much higher, being, indeed, above the brim.

6. The os externum is higher.

These facts greatly strengthen the deductions already made, as well as others to be presently made, from the measurements of the full time labour cases given in my tables. We are now in possession of a sufficient number of cases to enable us to trace the movements of the pelvic floor during a considerable part of the first stage and through nearly the whole of the second stage. We have as yet no section of a late ninth month first stage, but its want will scarcely be felt in our study of this process, with the facts already possessed by us. It is evident that the beginning and continuation of labour would be accompanied with a pushing downwards of the pubic together with the sacral segment by the advancing child, were there no restraining force acting at the same time. We have seen that there is, however, no pushing down of the pubic segment during the first stage, because—

1. The urethral orifice is neither inferior nor anterior to the position occupied by it immediately before labour.

2. The junction of the urethra and bladder (a point certainly in the pubic segment) is not at a lower level.

3. The thickness of tissue between the lower margin of the pubes and the vagina is not increased but is rather diminished.

4. The anterior cervical wall, as a whole, is not at a lower level.

There must, therefore, be from the very commencement of labour some force acting in opposition to that which tends to push down the pubic segment. This restraining force is undoubtedly, as Dr Berry Hart has pointed out, the upward traction exercised by the contracting uterus on the lower uterine segment and cervix through the attachment of the latter to the bladder and vagina by means of connective tissue. This upward traction is, however, from the first also counteracted by the thinning out of the lower uterine segment and cervix, so that it barely serves during the early part of the first stage to keep the pubic segment in its pre-parturient position. There are, as it were, three forces in operation, viz.:—

a. The upward traction of the uterus.

b. The downward pressure of the uterine contents.

c. The thinning out of the lower uterine segment and cervix (although it is scarcely exact to call this last a *force*).

For a time in the first stage these so oppose one another that the pubic segment is not moved at all. With the advance of this stage the upward traction of the uterus becomes stronger, and the pressure of its contents on the pubic segment weaker, as the sacral segment is more and more pushed on from above, and gradually actual elevation of the pubic segment begins. As we follow its movement during the second stage we find it still continues to be elevated, because the sections show:—

1. That the point of junction of the urethra and the bladder is higher in the pelvis and nearer the brim.

2. That the urethral orifice is higher in position.

3. That the thickness of tissue between the lower margin of the pubes and vagina is greatly diminished.

4. That the os externum is much higher in position.

Having thus established the fact that the pubic segment is elevated, we may now consider more minutely some details of the process. Though for a time in the early part of the first stage there is no actual elevation of the pubic segment on account of the antagonism between the forces acting upon it, we find taking place from the first an actual elevation of the utero-vesical pouch, caused by the stripping of the peritoneum from the posterior part of the upper surface of the bladder by means of the upward traction of the uterus.

If we compare Tables V. and VI. *b.*, we find that whereas in pregnancy the os internum of the anterior wall and the bottom of the utero-vesical pouch are the same distance below the brim (in vertical mesial section), in the first stage sections the latter is at a higher level. This change must be accounted for by the fact that the thinning out and elongation of the lower uterine segment takes place chiefly immediately above the cervix.

When after a time the uterine traction becomes stronger, the cervix is gradually elevated, and with it that part of the bladder (the posterior wall) which is attached to it. Then the upper and

posterior walls of the bladder are made to slide upwards and forwards over the base. Then the base in its turn, together with the rest of the posterior part of the pubic segment, moves in the same direction, and afterwards the anterior part is elevated.

This process goes on until the bladder lies behind and partly above the pubes, its cavity being continuous below with the upper part of the urethra, and parallel to the posterior surface of the pubes, and also to the cervix which lies close behind it. The changes in the relation of the cervix and junction of urethra with bladder to one another and to the pubes are well brought out in the following table:—

TABLE VII.—*Changes in the Relation of the Junction of the Urethra with the Bladder (Base of Bladder), the Cervix, and the Pubes.*

| Stage.             | Whose Case.            | Distance of Junction of Urethra with Bladder behind the Vertical Axis of the Symphysis. | Distance of Cervix from Axis of Pubes. |
|--------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------------------------|
| Nullipara,         | Average,               | In.<br>$\frac{5}{8}$                                                                    | In.<br>2                               |
| Pregnancy, 8th mo. | Barbour & Webster's,   | $\frac{1}{3}$                                                                           | $1\frac{1}{2}$                         |
| " 9th mo.          | Braune's,              | $\frac{1}{4}$                                                                           | $1\frac{3}{8}$                         |
| " 9th mo.          | Waldeyer's,            | (Some distance behind it)                                                               | $\frac{1}{4}$                          |
| First stage,       | Schroeder's,           | $\frac{1}{3}$                                                                           | 1                                      |
| "                  | Barbour & Webster's,   | $\frac{1}{3}$                                                                           | $1\frac{1}{2}$                         |
| "                  | Winter's,              | $\frac{1}{3}$                                                                           | $1\frac{1}{4}$                         |
| Second stage,      | Braune's, <sup>1</sup> | (Just about in line with it)                                                            | $\frac{1}{3}$                          |
| "                  | Chiari's, <sup>1</sup> | (do)                                                                                    | $\frac{1}{6}$                          |
| "                  | Barbour & Webster's,   | (do)                                                                                    | $\frac{1}{6}$                          |

Accompanying the uterine traction are two other conditions which help to force the pubic segment forwards against the bone, viz., the stiffening and passing forwards of the uterine wall during the pains and the compression by the head after it has descended through the dilated cervix into the pelvic cavity. At this stage, I believe, the head does push the pubic segment, but pushes it upwards and forwards, and this is due to the strong upward and forward resistance of the sacral segment against it.

The bladder is not at all drawn up into the abdomen to the degree hitherto supposed; the greatest part of it lies still in the pelvis. In Braune's second stage section its highest point is  $\frac{3}{4}$  in. above the brim level, in Chiari's 1 in., and in Barbour and Webster's  $1\frac{3}{8}$  in. The position of the organ in the latter case was well determined; while it extended above the brim only for a short distance, it had a transverse breadth behind the pubes of nearly five inches.

<sup>1</sup> Although Braune and Chiari do not mark the upper limit of the urethra we may almost exactly place it in their plates by measuring the length of the canal. We now know that the urethra is not elongated in labour.



In both Braune's and Chiari's cases the urethral opening of the bladder is lower than in Barbour and Webster's case. The explanation of these differences is to be found, most probably, in the unusual duration of the bag of membranes in the former two. The downward and forward pressure exerted by it resists somewhat the upward traction of the uterus by pushing the anterior part of the pubic segment against the pubes.

It seems to me, therefore, that, from the facts obtained by a careful study of all the sections hitherto published, we are justified in concluding beyond doubt—

1. That the pubic segment is not at all pushed downwards during labour.

2. That, on the contrary, it is elevated, and mainly by the upward traction of the uterus, as Dr Berry Hart first pointed out.

3. That this traction is at work from the very commencement of labour, but that owing to opposing forces it does not begin to raise the segment until the first stage has advanced for a certain period.

4. That in the second stage the upward and forward resistance of the sacral segment helps to push the pubic segment against the pubes through the medium of the child.

5. That the elevation of the pubic segment may be somewhat retarded by long persistence of the bag of membranes.

6. That the greater part of the bladder is not drawn up into the abdomen, but remains behind the pubes, only a small portion being above the brim.

7. That the urethra is not elongated during labour.

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SESSION 1888-89.

Edinburgh: OLIVER AND BOYD.

London: SIMPKIN, MARSHALL, HAMILTON, KENT, & CO., LIMITED.

## Part Second.

### REVIEWS.

*Clinical Lectures on Diseases of the Nervous System.* Delivered at the Infirmary of La Salpêtrière by Professor J. M. CHARCOT. Vol. III. Translated by THOMAS SAVILL, M.D. Lond., M.R.C.P.L., Medical Superintendent of the Paddington Infirmary, London. London: The New Sydenham Society: 1889.

THIS third volume of the author's Clinical Lectures has, with singular fitness, as its commencement, the lecture with which, after seventeen years of brilliant and successful work, Professor Charcot inaugurated the Clinical Chair of Diseases of the Nervous System. He takes the opportunity of pointing out the steps which led up to such an important addition to the Paris Faculty, and calls attention to the vast wealth of clinical material placed at his disposal for the elucidation of disease and the instruction of students. This is done with graceful modesty as regards his own share in the new departure, and grateful recognition of the assistance he received from the various authorities in carrying out the scheme.

Professor Charcot adorns every subject which he touches, and as time passes he seems to acquire greater skill in laying new facts before his audience, as well as more facility in his modes of expression. The present volume of lectures deals largely with various forms of muscular affections following joint diseases and injuries (*deutero-pathic amyotrophies*, to use his own term), different varieties of abnormal muscular movements, and many of the protean manifestations of hysteria.

One of the most interesting points in the present series of lectures is the description of the methods employed to detect simulation of the cataleptic state. By means of the graphic method the author demonstrates that in the true cataleptic condition the muscles remain absolutely rigid, and tracings taken from them give perfectly straight lines without the least appearance of muscular tremor, while the respiratory curve shows a very slight movement on the part of the thorax. In persons simulating catalepsy, on the other hand, the tracing from the muscles shows from the first distinct tremulous movements, which gradually become more evident as the muscles become exhausted, and the respiratory curve shows the kind of inspiratory and expiratory movements that are seen in conditions of severe exertion. There is a common belief that in the condition of catalepsy patients may retain the rigid state for an unlimited time; that he may, for example, be placed with his heels on one chair and his head on another, and repose peacefully with no other means of support for a day or two at a stretch. Professor Charcot corrects this misapprehension, and shows that a cataleptic patient and a healthy person simulating that condition retain similar attitudes for exactly the same



length of time, the difference being that in the one case the patient gradually and without muscular tremor yields to the influence of gravitation; while, in the other, the person attempting to assume the same position by an effort of volition shows the effects of exertion when succumbing to natural laws.

The observations of the author upon hysteria are of surpassing interest. France may well be regarded as the home of hysteria, and we are forced to agree with Clifford Allbutt, that it is not nearly so common amongst our robust northern people. Nowhere else in the wide range of medical literature can so many researches into male hysteria be found as in this volume. The relations of hysteria to hypnotism and spiritualism are fully dealt with, and, if space permitted, would merit special remark.

These lectures are to the full as interesting as any of their predecessors. They abound in original observation told in a charming style, and we cannot conclude this notice without thanking the translator for the excellent manner in which he has done his work, presenting the reader with a specimen of capital English while retaining to the full the spirit of the original.

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*Lectures on Nervous Diseases from the Standpoint of Cerebral and Spinal Localization, and the later Methods employed in the Diagnosis and Treatment of these Affections.* By AMBROSE L. RANNEY, A.M., M.D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital, etc. Philadelphia: F. A. Davis: 1888.

FROM some circumstance, hitherto unexplained, this elaborate work has only recently come into our hands, and it is not our fault that a notice of it should appear now, nearly two years after the book issued from the press. That such should be the case is not on the whole a disadvantage, as the delay allowed us to have opinions of our own regarding the merits of the work before being asked to give expression to them, and it is right to preface the following observations by stating that the book has already proved of some real use to ourselves—in truth we believe that the author has produced a work of distinct value. The volume can never take a place in the same rank as the treatises of Ross and Gowers—it lacks the broad grasp of the former, and wants the critical insight of the latter; but it has nevertheless some excellences of its own, for which the author deserves full credit.

He has been most painstaking in gathering together a vast mass of material on every branch of nervous diseases. His own observations bulk largely in the work, but he has drawn freely from the best authors on his subject. On the medical anatomy of the brain and spinal cord he dwells exhaustively, and scarcely less full is his description of the clinical methods employed in the study of nervous diseases. Each of these sections receives fully

one hundred pages. The medical anatomy, as might be expected from the previous work of the author, is well done, yet the volume would have been of greater value if more attention had been given to series of brain sections cut in different planes at various levels. The method of teaching is chiefly by diagram, and many of the drawings given are at once original and useful, but it would certainly help the reader, who has not the entire structure clearly before his mental vision, if the diagrams were placed alongside of pictures of brain sections.

If the chapter on the clinical examination of patients errs in any way, it does so in the direction of over-refinement. It is as a whole of much value, and must have cost the author much labour. In one respect we differ from his teaching—we do not like the multiplication of medical terms. He adopts some of the new phrases proposed by Stevens for affections of vision, such as orthophoria, and heterophoria, with its divisions, esophoria, exophoria, and hyperphoria. But even such terms, puzzling though they are, fade into insignificance beside others like hyperexophoria. Time was when we in Edinburgh were accustomed to the frequent introduction of new terms by a master in the art of phrase-making, but we question if he would have held his own as against the inventor of the words we have just named. Notwithstanding such points, the section on clinical methods is very good, especially on the physiognomical aspect of nervous diseases.

The four chapters which follow are devoted to diseases of the brain and its envelopes, diseases of the spinal cord and its envelopes, functional nervous diseases, and toxic and unclassified nervous diseases. They embrace on the whole very good descriptions of these affections, and are well illustrated in every way. Lastly, there is an elaborate chapter on electricity in medicine. Perhaps a keener sense of humour than the author seems to possess would have prevented him from enlarging on this subject to such an extent, especially in the matter of pictures, but his method of dealing with the matter is better than the meagre attention too commonly given to electricity in works on nervous diseases.

To senior students of medicine who wish to go fully into the subject, and have time to do so, this work will be extremely valuable, and to teachers it will in many parts be found to be highly suggestive. The author is to be congratulated on producing a work which puts many points in a clear, if not new, light.

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*The Insane in Foreign Countries: An Examination of European Methods of Caring for the Insane.* By the Hon. WM. P. LETCHWORTH, President of the New York State Board of Charities. New York and London: Putnam's Sons: 1889.

THIS is an octavo volume of 374 pages. It is well printed and illustrated with engravings, the most beautiful of which is taken

from a painting of Pinel freeing the patients at the Salpêtrière from their chains. We should say that the worst is an absurdly designed woodcut of a witch being burned at Inverness in 1722. After an introductory chapter on the treatment of the insane in past times, we have chapters giving the observations of the author in Great Britain and Ireland, and also in France, Germany, Switzerland, and other parts of Europe. Mr Letchworth devotes especial attention to the provincial Asylum of Alt-Scherbitz in Prussian Saxony. These observations are illustrated by original drawings and plans. The author has an eye to every species of construction, drainage, ventilation, and furnishing, and the outer aspects of asylum life, but he stops short of medical treatment. We look through the volume in vain to find any estimate of the comparative mortality, rates of recovery, or pathological work done in the different asylums he visited, hence the book is of much less value to medical readers than a similar study made by Dr Hack Tuke on "The Insane in the United States and in Canada," for Dr Tuke has not only an eye to buildings, furniture, and fittings, but can appreciate the medical treatment of the insane and what success attends it. Mr Letchworth's observations in British asylums, and his comparisons with what he has observed in the United States, are given in a candid and courteous spirit.

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*Selected Subjects in Connexion with the Surgery of Infancy and Childhood:* being the Lettsomian Lectures delivered at the Medical Society of London, 1890. By EDWARD OWEN, M.B., F.R.C.S., etc. Published by request. London: Baillière, Tindall, & Cox: 1890.

MR OWEN has done wisely in publishing these interesting lectures in an accessible form. The subjects were selected either from their intrinsic interest, or from the fact that the lecturer had special opportunity or experience. Having to be delivered to an audience insures that what of wit or lightness of touch the lecturer possesses he will give,—hence the chapters are pleasant reading, and contain much valuable matter. The surgery of glands, becoming every year more bold and active, is well described. Hygromata of the neck are described and illustrated with a detail and precision not found in the text-books. Of course harelip has its turn, and sterno-mastoid tumour. Vesical calculus and the herniæ of childhood both lead to debatable land, but Mr Owen's opinions are well supported in an interesting and lively manner.

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*Selected Monographs.* London: The New Sydenham Society.

THIS Society can hardly do more useful work than gathering together from time to time important and scattered monographs, and presenting them in book form to its members. This volume

includes Raynaud's important papers on "Local Asphyxia and Symmetrical Gangrene of the Extremities," translated by Dr Barlow, and to which the translator has added a valuable appendix culled from various sources, and further illustrating the clinical history and treatment of this interesting affection. It also contains the memoir by Klebs and Tommasi-Crudeli, "On the Nature of Malaria;" and that of Marchiafava and Celli, "On the Alterations in the Red Corpuscles in Malarial Infection and on the Origin of Melanæmia," the conclusions in both being pretty widely known already, but not in the degree of completeness which is here provided; and even here the translator, Dr Drummond of Rome, has had to condense and summarize owing to the limits of the space allowed him, but this has been carefully done, and the sense of the authors has not suffered. The last memoir is entitled, "A New Contribution to the History and Etiology of Spondylolisthesis," by Neugebauer of Warsaw, and is translated by Dr Fancourt Barnes; it contains numerous illustrations.

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*Transactions of the Clinical Society of London.* Vol. XXI.  
London: Longmans, Green, & Co.

THERE are no papers of very outstanding importance in this volume. Mr Holmes records the sequel to a case of ligature of the left carotid artery for supposed aneurism of the aorta. The patient died years after the operation, and it was then found that the lesion was stenosis of the pulmonary artery. There is another case of pulmonary artery disease—in this instance, however, pulmonary reflux—recorded by Sir Dyce Duckworth, which he had diagnosed as aortic reflux. It is well to have records of this kind, and it would further advancement if surgeons and physicians let us hear more of their mistakes. This volume also contains a short paper by Professor Annandale on the treatment of displacements of the internal semilunar cartilage. We would draw attention to the carelessness in the lettering of plates iii. and v., which does not correspond with that under the descriptive letterpress.

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*The Re-appearance (Recurrence) of Cancer after Apparent Extirpation.* By HERBERT SNOW, M.D., etc. London: J. & A. Churchill: 1890.

DR SNOW speaks after an experience of thirteen years as Surgeon to the Cancer Hospital at Brompton. His object is to point out that recurrence is not so common as some suppose, provided that certain details are properly carried out at the operations and in the after-treatment of the patients. He also dwells strongly (as all practical surgeons do) on the vast importance of early diagnosis and consequently early treatment, complete removal being more likely in early operations, and therefore recurrence less likely.



In the summary at the end of his book Dr Snow reiterates that cancer at its commencement is local; that infection is carried, mostly to lymphatic glands, by detached cells or nuclei; that later the infective particles invade the blood current, and thus the internal organs become affected. Dr Snow then dwells on his favourite theory, that mental distress or worry, and anything that lowers the general vitality, favour the development of cancerous disease. He believes that "local cell irritation" is the exciting cause. He agrees with the modern opinion that so-called recurrence after operation is simply the development of an unrecognised portion of the disease left behind. He considers that the removal of affected lymph glands is of more importance than the excision of the tumour itself. Dr Snow would keep the patient under careful observation for a period of at least two years after operation, in order that any nodule, etc., may be removed at once if possible.

Dr Snow treats of cancer as affecting the tongue, lip, breast, uterus, rectum, bones, etc. The method which he recommends for removing the breast is similar to that advised by Mr Banks. He makes a circular sweep including the whole skin overlying the breast. The axillary glands, of course, are removed also.

Dr Snow does not give the statistics of his cases, neither as to the periods during which they have remained well, nor yet as to the proportion in which recurrences have been observed.

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*Rectal and Anal Surgery.* BY EDMUND ANDREWS, M.D., LL.D., etc., and EDWARD WYLLYS ANDREWS, A.M., M.D., etc. Chicago: W. T. Keener: 1889.

THIS work has professedly a double object, viz., to give "the best modern methods of diagnosis and treatment known to the regular profession," and also the "secret methods of the specialists." The first object is carried out by a simple, clear, and fairly complete account of the surgical anatomy and affections of the anus and rectum, and their treatment. The exposure of quack "specialists" and their performances as experienced in America is interesting, and makes one thankful that we have not yet imported that species of cattle. The disclosures made by the authors suggest that rectal troubles must be very common, as much so as disorders of the teeth, on the other side of the Atlantic.

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*Diseases of the Rectum and Anus.* By HARRISON CRIPPS, F.R.C.S. Second Edition. London: J. & A. Churchill: 1890.

THIS second edition of a well-known book is altered mainly on the subject of rectal cancer. Instead of one chapter there are now eight devoted to this most important affection. The book, which originated as a "Jacksonian Prize Essay," is very complete, and a most valuable guide to the practitioner as well as a work of reference.

*Intestinal Surgery.* By N. SENN, M.D., Ph.D., of Milwaukee.  
Chicago: W. T. Keener: 1889.

THIS is a reprint of the papers that have appeared in the journals lately from the pen of Dr Senn. They are grouped under two heads—1. An account of the general literature of the subject; 2. An account of Dr Senn's own work.

Every one must have read Dr Senn's papers or notices of them, and must know something of the enormous amount of interesting and valuable work he has done in many departments of practical surgery. The subject in which we think he has distinguished himself most has been that of intestinal surgery. We need not therefore say anything in recommendation of the above work. It recommends itself to all who wish to know what has been done, and what can be done, in the way of experimental research to improve practical surgery.

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*The Bradshaw Lecture on Colotomy.* By THOMAS BRYANT, F.R.C.S.  
London: J. & A. Churchill: 1890.

MR BRYANT's lecture is a strong appeal for earlier operations in cases of rectal obstruction. He points out that much harm has resulted in the past from the idea that colotomy is "only to be undertaken when all medical and other means have proved useless." Mr Bryant tells us of cases of malignant disease of the rectum in which the patients have lived for several years after the operation of colotomy in comparative comfort. The second part of the lecture is devoted to an argument in favour of *lumbar* as against *inguinal*, or more properly speaking *iliac* colotomy. We do not think that Mr Bryant proves his case, however, and his argument is much weakened by the fact that apparently he has never performed the iliac operation. As a practical exposition of the lumbar operation by an experienced surgeon (Mr Bryant has operated on 170 cases) the lectures are most valuable.

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*Elementary Bandaging and Surgical Dressing.* By WALTER PYE, F.R.C.S., Surgeon to St Mary's Hospital, etc. Third Edition.  
Bristol: John Wright & Co.: 1889.

THIS little work contains much valuable information stated in a clear and forcible style.

It enters more fully than most works of the kind into details regarding materials for splints and surgical appliances, and also into mechanical devices regarding their manufacture.

This is a great point in its favour, as it tends to enable house-surgeons to exert a proper control over surgical instrument makers, and to save the patient from the misfortune of falling entirely into the hands of the latter.

The book contains many useful illustrations, but it appears to us

that too much is made of the triangular bandage in a work intended for hospital nurses and dressers, and the representation of Petit's tourniquet is evidently incorrect.

There is a very useful and concisely written chapter on the treatment of cases of poisoning.

On the whole it is an excellent and very handy little work, and fully merits the success it has hitherto achieved.

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*Lectures to Nurses on Antiseptics in Surgery.* By E. STANMORE BISHOP, F.R.C.S., Manchester. London: Sampson Low, Marston, Searle, & Rivington, Limited.

THIS is the first of a series of text-books and manuals for nurses being edited by Charles F. Rideal, F.R.S.L., etc.

Mr Bishop's lectures, three in number, give a very clear and faithful view of antiseptics. The little book is well illustrated, and ought to be in the hands of all nurses. Practitioners even might learn a great deal from a careful study of Mr Bishop's lectures.

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*Dental Surgery for Medical Practitioners and Students of Medicine.* By A. W. BARRETT, M.B., M.R.C.S., L.D.S. London: H. K. Lewis: 1890.

THIS little volume of "Lewis's Practical Series" has reached a second edition, and will admirably fulfil the purposes indicated in its title. It is full of useful information on every point in which the medical practitioner might find his own services called for in this department, while it will prove equally valuable in enabling him to recommend and explain to his patients such matters of treatment as would require to be placed in the hands of the special dental surgeon. It is concisely and perspicuously written.

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*Pulmonary Consumption considered as a Neurosis, being two of a Series of Lectures given by the Faculty of the Philadelphia Polyclinic in 1888 and 1889.* By THOS. J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic.

THESE lectures contain many trite illustrations of the interdependence of the various systems in the human organism, but they prove little regarding pulmonary consumption. The conclusions which are reached by the author from a mass of remarkable evidence will be received with astonishment and not a little incredulity. He thinks it "very certain that pulmonary consumption is essentially a neurosis of the peripheral nerves; that the neurosis, in all probability, establishes a herpes of the vagi; and the reason why a neurosis of the vagi is so much more disastrous in its effects than in the case of other nerves is that, on account of the peculiar anatomical construction of the lungs, the pathological products are

less easily gotten rid of in these than on the skin or in other organs." The author's therapeutics are no less peculiar. He believes—and he expresses his belief with unusual emphasis—"that the opinion that consumptives must have plenty of exercise and fresh air is one of the greatest stumbling-blocks in the successful management of this disease." It is difficult to conceive what has been the author's intention in publishing the lectures.

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*Harvey on the Circulation of the Blood.* Willis's Translation, Revised and Edited by ALEX. BOWIE, M.D., C.M. London: George Bell & Sons, York Street: 1889.

WE are glad to see this new edition in a handy form of Willis's Translation of Harvey's classic papers "On the Motion of the Heart and Blood in Animals."

It is much to be regretted that there is at present so great a tendency to ignore the work of the older masters of medical science. We can hardly imagine a better introduction to the true methods of research than a study of the beautifully simple methods of observation and admirably lucid reasoning of this great physiologist.

The present edition should help greatly in making these essays more popular. It is in all respects good, and is highly creditable to the editor Dr Bowie.

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*The Extra Pharmacopœia, with the Additions introduced into the British Pharmacopœia, 1885.* By WM. MARTINDALE, F.C.S. *Medical References and Index of Diseases.* By W. WYNN WESTCOTT, M.B. London. Sixth Edition: 1890.

WE welcome this new edition of this most useful work. Every busy practitioner really wishing to be up to date in his therapeutics should have it on his table or in his carriage for constant reference.

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*Medical and Legal Preventives and Remedies for Drunkenness and Dipsomania.* Two Addresses by W. T. GAIRDNER, M.D., LL.D. Glasgow: James Maclehose & Sons.

IN these addresses Dr Gairdner places, clearly and in an interesting manner, his views on the above subject. These are mainly—first, that there are two forms of drunkenness, the one a vice the other a disease. The latter, he points out, must be dealt with on medical lines. The sufferers must be placed where they can be properly treated, and for this purpose authorities should have the power to compel their removal to such places. He says that up to the present time John Bull may be said to have set up his back, and practically to hold the field against all comers in the name of the "liberty of the subject." He hopes, however, that



better and wiser times are coming. He approves of the principle of Mr Morton's Bill, but would extend its operation to all classes of the community. He considers that opinion is further advanced on this subject in Scotland than in England, and in the medical more than in the legal profession.

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*What shall we have for Breakfast? or, Everybody's Breakfast-Book.*

By AGNES C. MAITLAND, Author of "The Afternoon Tea-Book," "The Cookery Primer," "The Rudiments of Cookery," etc.  
London: John Hogg.

THIS little volume has been written, so its preface informs the reader, with a view to varying that meal, which is so apt to be monotonous and uninteresting in the ordinary British household. The receipts are numerous and well chosen, care having been taken to include none which would require a longer time to prepare than can be given to a breakfast dish; and a large proportion can be prepared at very moderate expense. Even experienced house-keepers will find something new in this book.

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"*The Guide*"—*A Help to Personal Progress.* Glasgow: Wm. Love: 1890.

WE have received the May number of *The Guide*. It is evidently a paper intended for young men. It contains a great deal of useful and edifying information.

The principal editorial article is on medical (?) advertisements. The article is written in an excellent spirit, and by a man, evidently, who has common sense as well as some scientific knowledge. He points out how shamelessly religious papers disfigure their pages with quack advertisements for the sake of the high prices received. The writer says, "The story is yet to be written of the dupery of young men, who have been fleeced of their money, robbed of their health, and altogether ruined by the unprincipled vultures who trade upon the fears, and fatten on the moral cowardice of their victims. Were it known to what extent these unfortunate patients are bled, under the threat of exposure, by men whose advertisements appear even in our religious papers and magazines, Christendom would cry shame upon a press that panders to such a trade."

We heartily recommend and wish "God-speed" to a journal that takes such a sensible view of what is really a great and crying evil.

We notice that *The Guide* has no medical advertisements on its pages. This seems to be the safest plan. The line must be drawn somewhere. Let it be drawn decidedly. It will cost something, for medical advertisements pay well, but the public will be the better, and the papers and magazines ought not to be the worse, for such a wholesome purging away of what is essentially unclean.

## Part Third.

### MEETINGS OF SOCIETIES.

#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

##### SESSION LXIX.—MEETING VII.

*Wednesday, 5th March 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

#### DISCUSSION ON DR BRAKENRIDGE'S PAPER ON INFLUENZA.

*Surgeon-Major Black* remarked that he had taken note of the mortality column of the *Times* for three weeks in January, during the crisis of the epidemic of influenza, and found that an average of 57 deaths prevailed daily, and the maximum of 88 occurred on Jan. 14th, and 82 deaths occurred on Jan. 21st. These amounts may be presumed to have occurred to well-to-do people or their friends in or out of London particularly, and not to poor people, and where specified, seemed to consist mainly of diseases of the chest. He was of opinion that the cause of influenza was aerial and not pythogenic, as it occurred in the fine climate of the Cape and on board ship, and there was as little reason to attribute it to the prevalence of ozone, as the disease flows from Eastern Europe, whereas this agent is transported by westerly winds from the Atlantic. It would, therefore, be likely that those who had occasion to go out much into the open air would be more liable to attack than those under shelter and warmth, or even over-crowded.

*Dr M'Bride* thought that Dr Brakenridge ought before now to have been thanked for his paper, probably the most masterly exposition which had yet appeared on the subject of influenza. Dr M'Bride was in the main able to confirm what Dr Brakenridge had said concerning throat affections. In the few cases of this kind which had come to his clinic, a comparatively trifling amount of pharyngitis was associated with great pain and marked constitutional symptoms, while the patients had what might be called a stricken appearance. Turning now to the ear, Dreyfuss and Schwabach had observed a marked tendency to middle-ear inflammation associated with hæmorrhages into the substance of the drum membrane. This, Dr M'Bride had not seen, although in several cases there had been a history of bleeding from the ear. The cases of middle-ear suppuration, however, he had met with were marked by this peculiarity—the pain did not cease on the appearance of the discharge, as is usually the case; on the contrary, it sometimes increased, while the mastoid process was often tender, and the cases often gave the idea of approaching head complications. Most of them, however, did well, but pain behind the mastoid over the anterior part of the occipital bone sometimes persisted, even after the ear was practically well. Michael has recently recorded similar observations

during the epidemic of influenza in Hamburg. Dr M'Bride begged to ask Dr Brakenridge what was the condition of the spleen in influenza?

*Dr Andrew Balfour* said that in Portobello the influenza was not confined to the well-to-do classes. Very few cases occurred among the very poor, but the working classes were as severely attacked as the well-to-do classes. In the mining village of Newcraighall, 2 miles from Portobello, the epidemic was very prevalent, 146 cases occurring there in three weeks, all of them displaying the characteristic features so ably brought forward by Dr Brakenridge. None of those affected in that village could be said to be over-fed, nor did they live in over-heated houses. None of the cases suffered from coryza, and there were not more than six cases of relapse, two of which developed pneumonic symptoms. In two cases peculiar rigors occurred for two or three weeks after the epidemic, especially when the patients touched any cold substances. These symptoms yielded to quinine. The epidemic began in the last week of December, but the week before that there were a large number of cases of broncho-pneumonia among children.

*Dr Allan Jamieson* observed that he hardly thought that the warmth of the houses explained the larger number of cases among the better classes which Dr Brakenridge said he had noticed. Exposure out of doors had, however, a decided determining effect. The nurses at the City Hospital suffered out of all proportion and severely, yet did not communicate it to the patients under their charge, who, indeed, in their turn escaped practically entirely. He had remarked that during convalescence and for some time subsequent to an attack patients complained of great thirst, more than after any febrile affection with which he was acquainted; this bore no relation either to the degree or duration of the antecedent pyrexia.

*Dr Clouston* said his experience was very strongly confirmatory of Dr Brakenridge's generalization, that this disease was one essentially affecting the nervous centres. They all knew that the higher nervous centres were affected very differently in different cases as the result of a heightened temperature. An ordinary catarrh of the mucous membranes, with a temperature of  $102^{\circ}$ , would in many persons scarcely cause any nervous symptoms at all, while in certain nervous children a temperature of  $99^{\circ}$  would always cause night delirium. His experience was that this was the fever most destructive of nervous energy of any fever he ever saw for its intensity and duration. Especially was the mental energy paralyzed. The volition was exceedingly weakened in all cases; not a single patient could come to any resolution, could carry out any scheme—they all felt utterly prostrate. The emotional faculty was much depressed. The patients all had a sense of organic ill-being, not one being consciously happy, the reasoning power was so much interfered with that almost a delusional state

was established, especially at nights. The sleep power was always interfered with. Many of his cases were delirious; bad dreams and wandering; insomnia very common indeed. It was a very extraordinary fact that their 200 sane and strong officials and servants at the Asylum were affected in the proportion of 30 per cent., while their 700 insane and more or less weak were only affected in 9 per cent. Both of these classes lived in nearly the same conditions in the house. But the sane were out in the fresh air much more than the insane, and went into town once or twice a week. One very marked feature was that the incidence of this disease bore no relationship to exposure to cold and chill. Many of their cases had been in bed in an equable temperature for many weeks before being attacked. His experience did not bear out Dr Brakenridge's theory of the relationship of the disease and warmth. Their thirty wards at Morningside were very different as regards the temperature at which they were kept, yet there was no perceptible difference in the proportion in which the patients were attacked in those wards.

*Dr Littlejohn* in the course of his remarks emphasized the following points:—1st, That as yet the poor population of the city had escaped the epidemic, and that more particularly no case had occurred in the common lodging-houses, which accommodated 1700 of the lowest class of the population. 2nd, That for some weeks there had been a marked rise in the week of mortality returns from diseases of the chest, which had for two weeks raised the general mortality of the city to the unprecedentedly high rate of 32 per 1000. The proverb that “a green Yule maks a fat kirkyard” had always been true as regards Edinburgh, and in the course of the last twenty years, on two occasions during mild winters the mortality had even exceeded that just mentioned. 3rd, That intercurrent with the influenza, measles was present in an epidemic form. 4th, That in the entire police force, numbering 500 individuals, and exposed night and day to a very free ventilation, fifty cases had been reported, with very few exceptions slight in character. Although the constables were either single, living in families, and in many cases sleeping with a fellow constable, or had families of their own, no evidence of direct contagion could be obtained. 5th, The deaths attributed to influenza (and in some of the cases rather dubiously) amounted to seven. 6th, Although wards, fully equipped and in constant readiness, were provided in the City Hospital by the authorities—the medical profession being duly aware of the fact—no application was made for the admission of any patient.

*Dr Barrett* said there were two points of importance in the morbid anatomy of some of the fatal cases at the Royal Edinburgh Asylum. In four cases pericarditis was found. In two of these there was slight pericarditis over right auricle. In one, over right auricle and right ventricle at the base. In one, general purulent



pericarditis—and this was a case of long duration. In the lungs, dry pleurisy was common when not combined with pneumonia. The form of pneumonia common was broncho-pneumonia, and this had a special tendency to become purulent, and with a general congestion of lung, a marked friability. In all the cases there was alteration in the kidney, which microscopically consisted of an intense cloudy swelling, but with little or no change in the Malpighian bodies or in the vascular system.

*Professor Chiene* mentioned the importance of the preventive treatment in infective diseases. He pointed out that the author of the paper, by the use of sulpho-carbolates, had been one of the first in this country to advocate the administration of substances, which by altering the blood would render the organisms harmless, even although they gained entrance. He had with others made an experiment with corrosive sublimate, taking  $\frac{1}{4}$ th of a grain thrice daily for three weeks, in order to see if this drug would have any effect in warding off the influenza. Thirty letters had been received from those who had taken the drug. In four, they had taken it for too short a time, so that twenty-six gave it a fair trial. Two of these had influenza complicated with bronchitis; five had feverish colds which might be called influenza; the rest escaped. The numbers were too small to be of any value, and they were brought before the Society, not as useful in themselves, but as an indication of what Prof. Chiene believed to be a most important method of treatment, both in regard to medical and surgical cases.

*Dr Caverhill* referred to the first cases as occurring amongst “neurotics”—people usually the most susceptible to contagious disorders. Their temperatures were usually 1 or  $1\frac{1}{2}$  degrees below normal. About and after 1st January digestive disturbances were most marked, while later on respiratory complications were seen. He had seen several cases of congestive patches in the trachea and pharynx, and in one rare case occurring in Brighton, a bleeding point was seen below the left vocal cord. Dr Felix Semon also saw the case and confirmed the observation. In the abdominal cases diarrhoea was immediately controlled by counter-irritation over the spine, on the ground of so many vasomotor symptoms present in all cases of this complaint. While the spleen was markedly enlarged in a few cases, this seemed to be exceptional, as it was not observed in slight cases to any extent. The tongue at first, with closely adherent ash-like fur, developed a red streak down the centre. The necessity of the central sanitary department issuing orders as to the danger of exposure in all—even the slight cases—seemed to be proved by this epidemic, and would have diminished the mortality to a great extent.

*Dr Craig* stated that he agreed with the remarks of Prof. Chiene in so far as he recommended prophylactic treatment. He, however, could not recommend these doses of corrosive sublimate to be taken

for such a time as a prophylactic for any disease. In Prof. Chiene's cases 38 per cent. were affected with the so-called influenza, a much larger proportion than occurred among the medical students of Edinburgh. He asked if this might not be to a certain extent due to the corrosive sublimate having deteriorated the blood, and so have predisposed to the disease. He thought that the red iodide of mercury was a more powerful antiseptic than even corrosive sublimate.

*Dr James Ritchie* thought that the cough in influenza was neither purely nor mainly a nervous phenomenon. He believed that in all cases, even in the minor cases of the disease, there was a congestion of the whole respiratory tract, as evidenced by the condition of the nose and throat, and by the presence of râles in so many even of the milder cases. He believed also that this condition affected the bronchioles, and that this explained the tendency to the bronchiolitic attacks and the catarrhal pneumonias which occasionally occurred after exposure. It had been pointed out that the mortality curve of influenza reached its highest in winter, which was just what might be expected considering that the fatal results were mainly due to respiratory troubles. *Dr Ritchie* believed that influenza was a zymotic disease; from his own observation he believed it to be infectious, the conditions of infection being not yet understood; but he was impressed by the fact that it had over the Continent and also in Edinburgh first and extensively affected the Post-office officials, and the President now reminded them, those of the Foreign Office also. He believed that the poison of the disease, although it might not be able in every one to produce characteristic symptoms, lowered vitality and increased the fatality of other prevalent diseases.

*Dr K. M. Douglas* stated that 117 cases of undoubted influenza had occurred among the Post-office employés, but the illness had been in most cases slight, the officers remaining off duty for four or five days. In some instances absence of two or three weeks was necessary. The earliest cases were observed in October, and were regarded as febricular; the maximum number of cases was reached on Dec. 24th, and again on January 7th, and the latest cases had occurred within the last few days. The various divisions of the staff were indiscriminately attacked. Of 311 postmen who worked outside, 45 had the disease; of 306 telegraph clerks who were employed inside the office, 43 were affected; and of 187 sorters and stampers who likewise work indoors, 21 took influenza. He thus could not come to any conclusion as to the predisposing influence of exposure or of confinement indoors. Giddiness was a prominent symptom, and catarrh of the bronchial tract frequent, evidenced by moist râles and sibilation. Pneumonic patches were also observed, but very transitory, as *Dr Brakenridge* had stated, affecting one small area after another. Three cases of pneumonia occurred. One of these was trivial, and soon recovered the second was

somewhat peculiar, being ushered in by severe diarrhœa and vomiting. When first seen the temperature was  $103^{\circ}$ ; the next day it was  $106^{\circ}$ . He became rather unmanageable, and he had to be removed to hospital, where he did well. The third case proved fatal, and was remarkable in the extreme prostration, the feeble and rapid action of the heart, which refused to respond to digitalis; and in the sputum, which, never rusty, was copious, frothy, and of a dirty brown colour. Then the subjects of chronic pulmonary disease were almost all attacked, and had been invalidated for one, two, or three months. As to treatment, he found careful diet and confinement to bed in most cases all that was needed. Antipyrin appeared speedily to relieve the pains complained of. In one case the patient had neglected himself during the first twelve hours of the illness, and was found with coryza, suffusion of the eyes, and in a condition almost approaching coma. Twenty grains of antipyrin every two hours, till the third dose had been taken, were ordered. Next morning the temperature was normal and the pains relieved, but the prostration was very long continued after the attack. With regard to the question of contagion, he saw no evidence to support belief in the contagious nature of the illness. The post-officers lived all over the town, but in very few instances were others in the house affected, though occasionally this did occur. The cases occurred, however, as a rule simultaneously, and not one after another.

*Dr Felkin* said that it was too late to do more than make a few very brief remarks. In the cases of influenza which had come under his notice he had seen several with rashes. In one case miscarriage had taken place, in two abortion, and in another abortion threatened. In some of his cases a distinct relapse sometimes accompanied with a rash had occurred. Apart from these cases one of his patients suffered from pleurisy, two others from pneumonia, three from severe diarrhœa, and one from severe excitement, passing into delirium. Another suffered from abscess of the left tonsil. He thought that those cases with marked catarrhal symptoms were contagious, the others not so. When he called to mind the large number of cases of dengue which he had seen, he could not help being struck by the similarity between it and the present epidemic. The sudden onset, the catarrhal symptoms, cough, and congestion of the fauces and pharynx, the acute pains, and especially the extreme and often long-continued prostration, and, as illustrated by the cases mentioned above, the rashes, the liability to relapse, and the continuance of malaise and pains in the joints for some time after practical recovery—all this seemed to be more than a mere coincidence, and he should not be at all surprised did influenza turn out to be dengue modified by climate, and all he had heard that night strengthened his opinion. Another reason for this speculation was that it was known that dengue was very prevalent in East Africa at the beginning of 1889. Towards the summer it

had made its appearance in Asia Minor and Turkey, spread thence to Russia, and they had good reason to believe that on this occasion the epidemic of influenza had followed a westerly direction, or might have been spread by the winds. With regard to the epidemic, at any rate in Europe, one could not help thinking that the weather had influenced its spread, and it seemed as if the factors most concerned were—dryness of the soil, the absence of rain or snow, the absence of, or at any rate the very small amount of dew, the presence of low-lying clouds and high barometrical pressure. During November and December in the districts visited by influenza the barometer stood between 780 and 788 mm. for weeks at a time. And it was noteworthy that in most of Europe there was a period of almost absolute drought, lasting from 14 to 18 days, either in the second half of November or in December. He found that the number of dry days occurring in November and December in the following places was as follows—Moscow, 29 days; St Petersburg, 35; Warsaw, 46; Lemberg, 39; Vienna, 36; Prague, 51; Stockholm, 46; Königsberg, 39; Copenhagen, 47; Berlin, 44; Munich, 35; Magdeburg, 42; Brussels, 43; Paris, 44. It was well known in the tropics that the fall of heavy rains or the onset of cold wintry weather were the factors which checked the spread of dengue most effectually. With regard to treatment, he found that the administration of carbonate of potash, nitrate of potash, and quinine rendered good service after the first two or three days.

*Dr Brakenridge* desired to thank the members of the Society for the patient hearing they had accorded to his somewhat lengthy paper. He was glad to find that the discussion had brought out a variety of experiences and views, most of which tended to confirm the facts observed and the conclusions arrived at by him. Some observations made in different circumstances supplemented in an interesting manner the inevitable defects in his paper—for example, Dr M'Bride's observations on the ear complications, and Dr Felkin's on the influence of the disease on pregnancy. It was unnecessary to dwell upon these. At so late an hour he would confine his remarks to one or two points which had a direct bearing on the subject matters of his communication, and which seemed to require explanation. Assuming that the disease was ordinary epidemic influenza,—which was not conceded,—the statement, based on the Registrar-General's statistics, that influenza was essentially a winter complaint, because the mortality curve corresponded with that of diseases of the respiratory organs, contained a manifest fallacy. It was quite clear that the prevalence of a disease which in favourable circumstances tended neither to develop complications nor to end fatally could not be so estimated. In Dr Brakenridge's own 236 cases there had been no fatal case, and therefore no death-rate curve at all, but of course it would be absurd on that account to assume the



absence of prevalence. It was quite possible—indeed, it was a fact—that during the warmer months or warmer weather such a disease might be very prevalent, but not at all fatal; and that during the colder months and cold weather it might be much less prevalent but much more fatal. Such a fallacy was exceedingly likely to occur in this disease, which did not tend to a fatal result except through chest complications, easily induced through exposure to cold. If the disease was dengue fever, which nearly all the military surgeons and officers whom he had met, or who had written on the subject, or who had seen both dengue and influenza, agreed with him in believing, then it occurred in its most typical form and greatest frequency in warm climates. The facts stated by Dr Allan Jamieson and others tending to show that those confined to their houses and warm rooms did not take the disease so readily as those exposed to the open air and cold, threw light on, but were certainly not opposed to Dr Brakenridge's observation that overheated dwelling-houses seemed to favour the occurrence of the disease. Indeed, Dr Jamieson's interesting observation that no patients in the City Hospital suffered from it, although several nurses took the disease, was rather, it appeared to Dr Brakenridge, to be explained on the ground that the well-nourished, healthy, and well-to-do were more liable to it than the poor and ill-conditioned. In the four instances Dr Brakenridge had given, the inmates of the overheated houses were healthy, well-conditioned individuals, freely exposed to the open air during the greater part of the day. He could affirm from his own experience, that every period of cold weather had brought a diminution in the number of new cases, and every period of warm weather an increase. Dr Andrew Balfour's statement that the disease had prevailed to a considerable extent in the working classes was quite consistent with the statement that the rich and well-to-do had suffered more than the poor and ill-conditioned. It accentuated the fact that the working classes deserved, at the present day, to be included among the well-to-do and well nourished. Regarding the post-mortem conditions observed by Dr Barrett, while Dr Brakenridge had met with, during the prevalence of the epidemic, many cases of dry pericarditis, he had not been able to associate the tendency to that complication with the so-called influenza. As to the lung and kidney complications which Dr Barrett had described, they had to remember that it was admitted that all the fatal cases at Morningside Asylum had occurred in weak, broken-down lunatics; and it was clear that great caution must be exercised in connecting with the present epidemic disease as their cause any post-mortem appearances, even those indicating recent disease, met with in such cases. In reply to Dr M'Bride's question, he might state that he had found the spleen enlarged in some, but certainly not all of his cases; occasionally the enlargement was of short duration.

## OBSTETRICAL SOCIETY OF EDINBURGH.

## SESSION LI.—MEETING VIII.

*Wednesday, 11th June 1890.—Dr BERRY HART, President, in the Chair.*

I. *Dr Brewis* showed—(1) TRÉLAT'S VAGINAL SPECULUM. The speculum is a self-retaining one, and is easily introduced. After the instrument is passed the blades are made to separate by means of two screws, one of which, the anterior, moves the front blade along a grooved bar, and presses back the anterior vaginal wall, while the posterior screw causes the posterior blade to rotate round an axle joint in such a way as to make the tip of the blade recede behind the vaginal portion. When the blades are separated an excellent view of the vaginal portion is obtained. In this respect it resembles Cusco's speculum, but differs from it in that it gives more room at the mouth of the instrument for operative manipulations. The advantages of Trélat's speculum are, that it is easily passed, is self retaining, gives a good view of the vaginal portion, and also gives room at the mouth of the instrument. Its disadvantages are that the blades hide the vaginal walls, and prevent the vaginal portion from being pulled down to the vulva. In point of usefulness, Dr Brewis thinks it ranks next to Sim's. 2. A PAROVARIAN CYST in which a large portion of the cyst wall had disappeared by thinning, so that only the peritoneum was left. The specimen showed that had it not been removed it probably would have cured itself by rupturing. It was not possible, however, to diagnose it from an ovarian cyst before opening the abdomen. 3. AN OVARIAN TUMOUR, combining the characters of an ovarian and a parovarian cyst. The upper portion consisted of a large monolocular cyst, covered with peritoneum, and had the Fallopian tube spread over its surface; while the lower part of the tumour was semi-solid. The tumour apparently grew from the hilum of the ovary.

II. *Dr Berry Hart* (President) opened a discussion on PLACENTA PRÆVIA. His remarks will appear in a future number of this Journal.

*Professor Simpson* said the subject had been brought before them in a very lucid and interesting manner, and the President had earned the gratitude of the Society for his paper, and especially for his exposition of the recent observations on the anatomical relations of placenta prævia. He (Prof. Simpson) agreed with Dr Hart that it was not necessary in every case of placenta prævia to suppose, with Hofmeyer and Kaltenbach, that the implantation was always due to development of vessels in the reflexa, though good grounds had been given for believing that such an explanation held good for some cases. The kind of treatment that Dr Hart had sketched was good for what Dr Hart had probably set before his mind as a typical case. But it had to be borne in mind that the general practitioner might have to do with a great variety of con-

ditions requiring different methods of treatment. He might find a case at the sixth month with undilated cervix and uncontracting uterus; or it might be at the full time with the cervix expanding and the uterus in full action. Now in the latter condition, to which a practitioner might be called without having any premonition of the complication he had to deal with, perhaps he might be able to help his patient by an expedient which Dr Hart had left out of consideration altogether, namely, the separation of a lobule or two of the placenta. He (Prof. Simpson) had found this treatment in such circumstances give perfectly satisfactory results, producing a temporary arrest of the hæmorrhage, and allowing of the expansion of the cervix to a degree sufficient for the extraction or expulsion of the child. The points on which Dr Hart had insisted as of special moment,—such as avoidance of delay, care in the prevention of laceration of maternal structures, and antiseptic treatment of the cavities, were all of the greatest importance; and Dr Hart had done well in calling attention to the special tendency to the danger of hæmorrhage in the third stage or post-partum, all the more that this was a danger in placenta prævia cases not sufficiently insisted on in text-books. The cause of the third stage hæmorrhage might have various explanations,—such as the flaccidity of the passive portion of the uterus to which the placenta was attached, the tendency of the endometritic state which have caused the bad implantation of the placenta to cause also morbid adhesion of it, or the fact that the main placental mass lay below the influence of the contractions in the active portion of the uterus. As regards the methods of resuscitation in cases where bleeding patients were getting faint, it was always difficult to determine the value of transfusion of blood; but in the ordinary run of obstetrical cases, its employment lay outside the means at the disposal of the general practitioner, and it was an important service that Dr Hart had rendered them in showing the value of Münchmeyer's saline infusions, which should always be easily available. It was also to be borne in mind that in such circumstances hypodermic injections of ether or brandy often gave most satisfactory results, and it was always important to promote uterine contraction by hypodermic injections of ergotin.

*Dr A. H. F. Barbour* thought that while the definition of placenta prævia proposed by the President was the best one that had been given, there was this difficulty with regard to it, that the limit of the lower uterine segment was not well marked on the lateral and posterior walls. The firm attachment of the peritoneum was only present as a well-marked line anteriorly, and the sudden transition from a thick to a thin portion was not so well marked in the posterior wall as in the anterior one of the various post-partum uteri he had examined. Until we know more about the retraction-ring all round, there was difficulty in using it in defining placenta prævia. As to treatment, he had hesitation in speaking,

as he had seen only a few cases. He wished to know whether the line of treatment recommended by the President would exclude rupturing the membranes, because he thought we must emphasize the advantage of it for cases of marginal placenta prævia. In three cases of marginal placenta prævia he had tried it, and from the moment of rupture the bleeding stopped. It acted by allowing the presenting part to come down as a plug; and also, according to Schroeder, by allowing the placenta to go back with the retracting uterine wall instead of separating from it.

*Dr James Ritchie* had not yet heard a theory of the mode of production of placenta prævia which commended itself to him. As regards treatment, his experience had not been large; he had not met with a case of complete placenta prævia, but in partial cases, in which the os was considerably dilated, he found that by separating with the finger a portion of the placenta, which he pictured to himself as being on the stretch, the hæmorrhage was temporarily arrested, although previously it had been frequent and profuse. In such a case if the head presented he ruptured the membranes, and allowed the head to come down as a plug on the bleeding portion. In cases in which the os was not dilated he believed that the mode of proceeding advocated by *Dr Berry Hart* was the proper one. He was glad to have the President's experience of *Münchmeyer's* method of saline transfusion. He had lost one patient from post-partum hæmorrhage—a case of uterine tumour. Although he had frequently had anxiety, he had found subcutaneous injection of ergotin with early use of hot water douche sufficient in post-partum hæmorrhage. The case of tumour referred to was in a very delicate patient, and the amount of blood lost was not absolutely large.

*The President* thanked the Fellows for their appreciation of the way he opened the discussion. His intention was, of course, not to enlarge on elementary points in treatment.

III. *Dr Thomas Wood* read his paper entitled EXPERIMENTS ON THE FÆTUS, AND THEIR BEARING ON ITS ATTITUDE IN UTERO, which will appear in a future number of this Journal.

*Prof. Simpson* thought *Dr Wood* had made a very praiseworthy effort to arrive at a solution of the cause of the preponderance of head presentations over all others, although all his observations did not quite coincide with the old gravitation theory which he had been led to adopt. It always seemed to him (*Prof. Simpson*) that that theory failed to account for the persistence of such presentations in cases where gravid women lay long on one side with the fundus as low as or lower than the cervix uteri. *Dr Wood* would need to multiply his observations to make them really valuable; for it had been shown many years ago, that in children born dead as breech presentations the specific gravity of the lower part of the trunk had been found the greatest, showing that the



greater specific gravity of one or other pole of the foetus might be an effect and not a cause of its presentation in labour. No doubt the vitality and active movements of the foetus played an important part in the assumption and maintenance of the commonest presentation. Meeh had shown that the movements of the lower limbs would be mainly influential in determining presentations: that the effect of their impingement on the uterus towards the fundus would be mostly lost on the yielding walls in a head presentation, whilst in a breech presentation their impingement through the soft walls of the uterus on the pelvic bones would tend to bring about a spontaneous version.

*Dr J. C. Webster* said that he did not believe clinical evidence would support *Dr Wood's* experimental conclusions. It is not uncommon in abortions and miscarriages to find cephalic presentations. In three cases seen by him during the past few months this was the condition. According to *Dr Wood's* theory such an occurrence should be very rare. He believed, on the contrary, that in the early months, before the commencement of foetal movements, cephalic presentations were most common. In the early weeks, judging from cases in which the uterine contents have been expelled entire, it seems very probable that the foetus lies in the amniotic cavity with the head below the level of the breech. One is struck, in examining these specimens, by two things, viz., the shortness of the cord relatively as compared with its condition at full time, and also its nearer attachment to the symphysis of the foetus. These two factors must undoubtedly cause the foetus to be suspended with the head below the breech, except in those cases of abnormally low implantation of the placenta. Thus a tendency to grow head downwards might be impressed upon the foetus, and might continue throughout its life *in utero*.

*Dr James Ritchie* said that if the specific gravity of the foetus is one cause of the position it ultimately assumes at full term, there must be another factor, because, although near the full term the head is found lowest more frequently than at an earlier date, yet frequent examination shows that even up to the onset of labour there may be a frequent change in position of the child.

*Dr A. H. F. Barbour* said that *Dr Wood* must be congratulated on his maiden contribution to the Society's work. He objected, however, to the statement that frozen sections show that the long axis of the uterus corresponded to the axis of the brim of the pelvis when the patient was recumbent. The uterus took this position when a contraction was present, but in the interval between pains its long axis was more nearly parallel to the spinal column. He was also inclined to think that, while removed from the body the uterus was globular, in the body it had the shape which *Sir James Y. Simpson* described, viz., that of an ovoid with the narrow end downwards. He would recall also a passage from *Hunter*, where he describes the foetus as "adapted to the circum-

stances of its habitation," as showing that Hunter held that the shape of the uterus influenced the position of the fœtus. A cast that he (Dr Barbour) had recently made of the fœtus, taken out of the uterus at the eighth month of gestation in which the breech presented, this being from the peculiar attitude of the limbs the smaller end of the ovoid, was in favour of Sir James Simpson's as against the gravitation theory.

*Dr Wood* replied that Dr Simpson had raised the old objection, namely, the horizontal position, but that did not in the latter months raise the centre of gravity of the fœtus in utero, and make its position unstable. The centre of gravity, which is nearer the cephalic pole, still lies as low as it can possibly be in the uterus, and therefore it is still in stable equilibrium, and for this reason the fœtus has no tendency to shift its position on account of gravitation; in fact this is in accordance with gravitation and not the reverse. Then Dr Barbour had mentioned the shape of the uterus. He (Dr Wood) had no doubt that it was ovoid in shape normally, but he still thought that its shape was not so sufficiently determined or rigid as to cause the fœtus to adapt itself to it independently of the laws of gravitation. Hunter, he was sure, distinctly inclined to the gravitation view. Then with regard to the short cord suspending the fœtus, it was noted by Scanzoni in his paper on the subject, that in the very early stages the fœtus was suspended by the cord, but that did not affect what he had said, because he had been speaking of the period when the cord was sufficiently long to enable the fœtus to present with any part. Hunter, he thought, showed that the cord by about the tenth week was so long, that instead of running straight from the fœtus to the placenta it was loosely twisted up. Regarding what Dr Ritchie had said, he would just simply remark, that he started those experiments with views similar to his, but had to give them up, because he found the position not so tenable as the one he had now taken up.

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## Part Fourth.

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### PERISCOPE.

#### MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

*Berlin. Klin. Wochens.*, No. 15, 1890.—Dr C. Seidler tells his experiences of the operation of methacetin. This drug, according to its chemical constitution, is to be considered as a paraoxy-methylacetanilid. It is a non-odorous and tasteless rose-red scaly powder, and is easily soluble in water and alcohol. In doses

of '3 to '4 or '6 grammes it is a very satisfactory antipyretic, but is contra-indicated in cases of phthisis florida owing to the sweatings which are brought on frequently by its use. Its nervine and antineuralgic properties are not so marked as its antipyretic ones. In the neuralgiæ of tabetic patients it seemed to fail entirely. In acute and subacute rheumatism of the joints its action was prompt and certain, the fever, pains, and swellings disappearing in a few days and not recurring. Against the prodromal headaches of typhoid and scarlet fever, of acute gastric catarrh, nephritis, and so forth, it seemed to operate favourably. It causes no disagreeable sequelæ save pretty heavy diaphoresis.

*Ibidem*, Nos. 15, 16, 17, 18. — Kuttner has four papers on "palpable kidneys." He distinguishes four principal forms in which those organs are accessible to bi-manual palpation.

1. The kidney shows a clearly demonstrable respiratory mobility with unimportant amount of displacement.

2. Or it shows a dislocation of the first degree, that is,  $\frac{1}{3}$ ,  $\frac{1}{2}$ , or  $\frac{2}{3}$  of the organ can be felt, it is mostly mobile during the respiratory act, can be pushed out of place by the hands, and is dislocated, more or less, forwards.

3. Or it shows a dislocation of the second degree; the kidney can be felt in all its extent, is easily pushed about, moves with respiration, lies near the anterior belly-wall, or can easily be brought thither.

4. Or the kidney is dislocated and fixed in its abnormal position.

Many of such dislocated and fixed kidneys are congenital and of slight clinical importance, but often this condition is acquired when a mobile dislocated kidney becomes fixed by the development of local inflammatory processes. To understand how one degree can be evolved from the other, it is requisite to have a clear view of the ætiological moments which condition the origination of palpable kidneys.

In the first line we have to take into account the factors which are in a position to loosen or destroy the connexions of the kidneys, and so bring them into other than normal relations to neighbouring organs.

A few authors suppose that the disappearance of the fat of the capsula adiposa renis is a likely cause. Experience agrees with this view; movable kidneys are frequently met with in the progress of diseases attended by a general loss of fat, as in phthisis, carcinoma, etc., or in acute diseases with high fever, as in typhoid, malaria, etc. Should the fat of the adipose capsule disappear, and be replaced by a slack, wide-meshed connective tissue, the kidney loses its firm support and sinks downwards by reason of its weight. The tolerably equable pressure it formerly exercised on the peritoneum becomes one-sided and downward, the elastic peritoneum yields and stretches; a sort of renal mesentery is thus gradually

formed, and allows the organ to make similar excursions to those we see normally in organs furnished with a lengthy mesentery. To complete this condition time is required. In proportion as the fat of the adipose capsule vanishes, and the kidney assumes a lower position, its respiratory excursions increase in extent and become more and more accessible to the palpating fingers. While the kidneys sink downwards, they recede gradually from the direct influence of the diaphragmatic contractions, and on the right side become affected by the respiratory depression of the liver, which still further continues the dislocation downwards. Perhaps this is one reason why right-sided movable kidney occurs most frequently.

As Cruveilhier has pointed out, tight lacing is also a powerful factor in the production of floating kidneys.

Of not so much importance, in the author's opinion, are frequent pregnancies, abortions, pendulous abdomen, and the supposed causation of hyperæmic swelling of the kidneys occasioned by menstruation (as consequence of the connexions between the plexus ovaricus and plexus renalis) as has been asserted by several authors. Occupation, the doing of hard work or none at all, does not seem to have any influence on the production of movable kidney. Traumatism, such as falls, blows, gymnastic exercises, etc., etc., have also been credited with bringing about this condition. Probably the mobile kidney was present before the accident, which was supposed to originate it, had happened.

All that has been advanced as causal does not explain the floating kidneys of children and young girls. All the causes cited can only be "opportunity causes" which lead up to movable kidneys or make movable ones more mobile only in a certain predisposition, but of themselves are not able to remove a kidney from its normal place permanently or temporarily, and give to it a certain amount of mobility.

The frequency of this condition, which was once considered an anatomical curiosity, is much greater among women than men. Out of 667 cases tabulated from various authors, 584 occurred in females and 83 in males. It may happen at any age, the greatest number of cases happening from thirty to forty years. It occurs oftenest on the right side: out of 727 cases, 553 were right, 81 left-sided, and in 93 both organs were affected.

If the causes of *Ren mobilis* are obscure, so also the complex of symptoms occasioned by it are uncertain and doubtful. Sometimes no inconvenience is felt; at others pains of a dragging, pinching, and boring character are complained of, limited to the affected side or radiating to the other, or to the loins, and between the shoulder blades: they are paroxysmal, brought on by slight exertions, or may take on the form of neuralgiæ, especially sciatic and intercostal. The annoyances increase during menstruation. Many patients are highly nervous, hysterical, and hypochondriac. The



urine is sometimes albuminous and (rarely) bloody. Disturbances of digestion are more frequent; but it is doubtful whether the relation is causal or mere coincidence. Constipation may be caused by the mechanical pressure of the displaced kidney. The occurrence of icterus is explicable by mechanical functional disturbances of the gall-bladder, but the author has never seen this complication in any of his cases.

Patients with movable kidney are subject to sudden attacks of abdominal pain, feeling of anguish, vertigo, vomiting, and fever. The cause of this has by some been attributed to strangulation of the kidney in the surrounding connective tissue and peritoneum, giving rise to a more or less circumscribed peritonitis; others blame torsion of the renal vessels, especially the veins, and consequent acute congestion; others attribute it to intermittent hydro-nephrosis.

Slighter urinary disturbances are relatively frequent, colicky pains during micturition, frequent desire to urinate, and slight polyuria; these are generally unimportant and transient.

As authors differ about the ætiology and symptomatology of this disorder, so they deviate from each other as to its cure. Some see the only possible cure of *Ren mobilis* in its extirpation, some in nephrorraphy, and others object to all operative interference. The author would limit himself to nephrorraphy in the very worst cases threatening life and destroying all comfort. Properly constructed bandages are useful, and most in cases accompanied by pendulous abdomen. The author describes one he has found helpful. Narcotics and narcotic salves, poultices, and so on, may be needed for the pains, and the stomach disturbances must be treated specially.

*Ibidem*, No. 16, Dr A. Adler details minutely a case of "sub-cortical alexia." The patient could not recognise letters by optical perception, but by tracing their outline (in the case of written letters only) he could then find out their names; on the other hand, he wrote fluently and correctly to dictation and spontaneously. He had also amnesic colour blindness. He knew objects held up for his inspection, but could only name them with difficulty; he frequently could only name objects after helping mere sight by the other senses—touch, taste, and hearing.

Dr Adler supposes that here, besides the lesion of the subcortical optical fibres of the left occipital lobe, by which his right-sided hemianopsia was caused, an interruption of the communication of the route between the right optical cortical field and the left centre of speech had taken place, where it runs in the left hemisphere near the commissural fibres connecting the two occipital lobes; perhaps those commissural fibres were also broken through. In the few cases of hemianopsia with alexia which have come to an autopsy, disturbances in the region of the left occipital lobe and gyrus angularis were present.

The left optical centre in this patient is therefore still in immediate conducting connexion with the speech centre (but not with the outer world), but the right is only in connexion by the circuitous routes over the cortical fields of the other nerves of sense (hearing, touch, and taste).

Objects were therefore recognised by the right hemisphere; but because the connexions of the right-side optical centre with the speech centre are destroyed, and access to the left occipital lobe debarred by the right-sided hemianopsia and the breach of the commissural fibres, optical perception cannot immediately call up the vocal idea, but the roundabout way of the centres of the other senses must be followed, therefore the difficulty of finding and oftener not finding the names of things notwithstanding their instant recognition. But the finding out of names must become easier as soon as, by aid of the other senses, the intrinsic characteristics of any object are awakened up, because for them the direct road to the speech centre is open. Printed letters and colours are, in contradistinction to concrete objects, not recollected, because their conception consists entirely in an optical and vocal memory-picture; if the association between the two is broken their recognition is impossible. When naming written letters the patient employed an artifice: he traced their outline in the air, and knew them while writing—that is, with help of the movements employed in forming them. This could succeed only with written, not printed letters, because we do not write the latter, and have not acquired their representative movements.

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### OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

ALOPECIA AREATA USUALLY A SEQUELA OF RINGWORM (?)—After relating a case where a gentleman, aged 31, who had had ringworm badly at school, now suffered from alopecia areata, Mr Hutchinson remarks, “I believe that this is usually a sequela of ringworm. It may occur years after the attack of ringworm, or within a short interval; but my recent experience—that is, since my attention has been drawn to the matter—is that almost always in alopecia cases there is a former history of that disease.” (We have recently made some investigations into this alleged sequela, and as the result of them find that in hardly any of the instances in which we made the inquiry was there a history of ringworm in childhood. But there is another argument of more value, since it does not depend on the evidence of memory, occasionally fallacious. Two of the most common localities for alopecia are over the inser-

tion of the trapezius into the occipital bone on one or other side, and above the mastoid process behind the ear. Now these are the localities above all others where ringworm is rarest. We cannot help thinking that Mr Hutchinson in this theory is not borne out by facts. It is true, however, that alopecia areata does sometimes succeed tinea tonsurans, and in the very spots which had been affected. The infrequency of this—we can only remember one case—would appear to point to a coincidence merely.—W. A. J.) —*Archives of Surgery*, October 1889.

TRICHOMYCOSIS NODOSA.—Dr Glasgow Patteson has investigated this condition anew, and claims to be the first to prove a bacillary origin. The affection seems peculiar to the hair of the armpits and scrotum. The hairs, to the naked eye, present an abnormally dry and dull appearance, and feel rough and knotted to the touch. Examined by a lens, the roughness is seen to be due to the projection from the sides of the shaft of numerous very minute concretions, which may assume either of two forms—a diffuse or a nodular. The diffuse form may extend along the shaft for nearly its whole length, with very narrow intervals of healthy hair; while the nodular form consists of small rounded masses, generally most thickly placed on the outer third of the hair, with longer intervening healthy intervals. The masses are firmly adherent, cannot be removed by forcible rubbing, and can only be scraped off with great difficulty and injury to the hair. Under no circumstances does the disease penetrate into the hair follicle, and in scrapings from the skin of the axilla and scrotum no bacteria were found in the epidermal scales. The bacilli lie altogether in the cortex of the shaft, and do not penetrate deeply into the substance of the hair. The maceration caused by the moist warmth of those parts, where alone the affection is found, loosens the epidermal scales and allows an entrance to be effected underneath. There is a hard, homogeneous or slightly granular material formed similar to that with which the pediculi fasten their ova to the hair, which forms the nodes and encapsules the bacteria. It is extremely hard, insoluble in most reagents, is of a pale yellowish colour, stains dark brown with iodine, and deep purple with methyl-violet. The bacilli are short fine rods with slightly rounded ends, about two or three times as long as broad, and about one-fourth the diameter of a red blood corpuscle. They are non-motile, and so far cultivation experiments have failed. In all the cases examined, amounting to ten, the same distinguishing characteristics were present—the hard, insoluble nodes, the splitting and rupture of the cortical fibres, the burrowed and worm-eaten surface, and the colonies of fine rod-shaped bacteria. Dr Patteson gives a table showing the differences between four nodose conditions of the hair, viz.,—(1), trichomycosis nodularis (Juhel-Renoy) or piedra; (2), trichomycosis nodosa (Patteson); (3), trichorrhaxis nodosa (Kaposi); and (4), nodose

hairs (Walter G. Smith). These latter, he says, possess no abnormal brittleness, but this is contrary to the statements made by other observers, for while in trichorrhæxis nodosa the fracture occurs *through* a node, in nodose hairs it takes place *between* these. Dr Patteson also omits to mention whether in any of his cases the phenomenon of red sweat was observed. In association with this, nodes resembling those found by Dr Patteson have been found, and in them bacteria resembling the *Bacterium prodigiosum*.—*Trans. Roy. Acad. of Med. in Ireland*, 1890, and *Brit. Journal of Dermatology*, April 1890.

**KELOID.**—Leloir and Vidal have contributed some interesting facts to our previous knowledge of keloid. They describe the spontaneous and the cicatricial forms, and add what has been often confused with these, an account of hypertrophic scars. In spontaneous keloid the number of the individual growths is sometimes very great. Thus, in a case observed by Amicis there were 318, the greater number spontaneous, but a certain portion secondary or cicatricial. They were arranged nearly symmetrically, and were most numerous on the arms. Examined microscopically, the epidermis and its interpapillary cones preserve their normal aspect. Keloid, unlike cicatricial tissue, arises in the corium, up to that time intact, and is, consequently, not a formation destined to repair a loss of substance. The persistence of the interpapillary cones and of the papillæ is not met with in the secondary or cicatricial keloid, and is limited exclusively or nearly so to the true or spontaneous form. The authors, after careful examination, have not been able to find any alteration in the nerve filaments or to discover the smallest microbe. Cicatricial or secondary keloid is that which is developed in the thickness of a scar. It begins below the cicatricial neoplasm or at a point in its margin, but the ultimate growth has no connexion with the extent of the scar in which it has arisen. Kaposi has stated that the hypertrophic scar closely resembles keloid, but the authors do not accept this view. An hypertrophic scar is usually redder, more vascular, and not so hard as keloid. The latter, once removed, recurs almost constantly in the cicatrix left after the operation, or in the course of the stitches, excision of hypertrophied scars cures them completely, or they may spontaneously disappear. The authors have seen two instances of recent cicatricial keloid cured under the continued and regular application of mercurial plaster. The true keloid they find is best treated by repeated scarifications carried nearly as deep as the growth, and not more than two or three millimetres beyond its margin. These must be continued till there is an uniformly pliant and thin cicatrix. Should a nodule of induration not larger than a pin's head remain, this little by little enlarges, and the neoplasm recurs. The scarifications are to be two millimetres apart, and crossed at right angles. The pain can be much lessened by painting the part once or oftener





disease, and having a gloomy prognosis. The lesions were numerous on the face, hands, and feet, and were deeply pigmented. Moreover, there was swelling of the lymphatic glands, those at the elbow being of the size of pullets' eggs, and quite visible. The disease had been in existence for eight or ten years, and showed here and there points of involution. In 1884 a number of new deposits had occurred, notably on the backs of the hands and feet. A recent inspection of the patient shows that he remains in good health, and that without any treatment the sarcomatous growths in the skin have undergone complete involution, leaving hardly an atrophic condition behind. In 1884 he recorded an example of xanthoma with widespread involvement of the whole body with plane, tubercular, and tuberoso lesions. These have gradually become absorbed, and nothing but a bronzed hue of the skin, which has always been an interesting feature of his case, persists.—*Journal of Cutaneous and Genito-Urinary Diseases*, Jany. 1890.

**LICHEN RUBER AND ITS CONNEXION WITH LICHEN PLANUS.**—This question has been much discussed of late, and it is very opportunely that Hans von Hebra has published a paper which much elucidates the matter. He shows that various authors have confused the disease called pityriasis rubra pilaris by Devergie with lichen ruber acuminatus. Though in this there are some French writers who would not agree, he expresses the simplest view of the case by stating that Devergie's malady is essentially a so-called lichen pilaris increased to excess with all the possible consecutive phenomena of irritation. It must be admitted, however, that there are some symptoms in which there is merely a question of degree. This applies to the itching and pigmentation, both of which are present more or less in both diseases. He then describes three forms of true lichen.—1. Lichen ruber acuminatus, the dangerous form which is accompanied by serious symptoms, and may cause death. Thus there may be fever; œdema, more especially of the lower extremities; albuminuria, sleeplessness, general prostration, and loss of weight. 2. Lichen ruber miliaris. This spreads quickly and becomes general, but is not acuminated. There are countless flat or obtuse papules about the size of a pin's head, or larger. 3. Lichen ruber planus localis. This is an eminently chronic variety, and may continue for many years without increasing much in extent. It rarely occupies a larger surface than that of the palm of the hand, which gradually becomes covered with a warty, horn-like, firmly adherent, epidermic layer. This is the lichen planus of Wilson. He relates two cases in which both lichen ruber acuminatus and planus occurred consecutively in the same patient.—*British Journal of Dermatology*, March 1890.

**RARE FORM OF IDIOSYNCRASY WHEN TANNIN WAS APPLIED LOCALLY.**—Lange of Copenhagen relates an instance in which the

throat of a person, aged 29, was brushed with a solution of tannin, 1 in 15, for a catarrhal attack. Directly thereafter severe swelling of the mucous membrane arose, complete blocking of the nose, and copious watery secretion. Examination disclosed well-marked œdema of the gums and uvula. Some hours later complaint was made of numbness and unendurable itchiness over the whole body, accompanied by urticaria. This disappeared next day, though the œdema of the uvula lasted longer.—*Deutsche Med. Wochenschr.*, No. 1, 1890.

CHILBLAINS AND CHAPPED HANDS.—Baelz of Tokio recommends the following most strongly:—

|   |                   |   |   |   |         |
|---|-------------------|---|---|---|---------|
| R | Potassæ causticæ, | . | . | . | 0·5     |
|   | Glycerini,        |   |   |   |         |
|   | Sp. vini rect.,   | . | . | . | āā 20·0 |
|   | Aq. distill.,     | . | . | . | 60·0    |

The hands are to be first bathed in warm water, and the mixture rubbed in subsequently. A single daily application produces a cure in course of two or three days.—*Monatshefte für praktische Dermatologie*, No. 6, 1890.

## PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

PLASTIC OPERATION FOR CHRONIC TRACHOMA.—Noisewski, of Dünaburg, recommends an altogether new method of operative treatment in trachoma. A good deal has been done lately in this direction, the operative measures consisting mainly of squeezing out the granules and removing the diseased portions of the conjunctiva with scissors or the thermo-cautery. Such treatment seems to be useful in some cases, but necessarily leads to more or less marked cicatricial changes. Noisewski's operation consists in removing a rectangular portion of the diseased conjunctiva, and transplanting a corresponding piece of mucous membrane from the lip. The transplanted portion of mucous membrane is secured by four stitches placed at each corner. The two anterior stitches are brought right through the lid and tied on the skin surface, the posterior ones are introduced more superficially.—*Centralblatt f. Augenheilkunde*, Feb. 1890.

A NEW OPERATION FOR DISTICHIASIS.—The following operation is recommended by Landolt (*Archives d'Ophtalmologie*, vol. 10). It is evidently, though this is not stated, a modification of Dianoux's operation. The description given does not give one the impression that it possesses any advantages over the older operation. Landolt describes the operation after having put it in practice "more than once" (!) An intermarginal incision beginning in the ordinary manner is first made. This incision is carried much deeper than in other operations for trichiasis; the lid is, in fact, divided over its whole extent into two layers, the anterior of which comprises the skin and

subcutaneous cellular tissue as well as the misdirected eyelashes. After this splitting has been effected an incision, reaching from one end of the lid aperture to the other, is made through the anterior layer parallel to, and "a few millimetres" from the lid margin. This divides the anterior layer into two portions, the narrow inferior bridge of which carries the lashes. By means of two sutures with needles at either end, which are carried below the upper portion of the anterior layer and brought out in the skin of the eyebrow, where they are knotted over pieces of drainage tubing, traction is brought to bear on this little bridge of skin. In this way it becomes transplanted further up, and occupies a position below the larger portion of the anterior layer, which now by its own weight not only covers the displaced marginal flap, but also the raw surface of the edge of the lower layer, to which it becomes adherent so as to form the new lid margin. After a few days, when the healing is firm, an incision is made at about 1 mm. from the lid margin so as to permit of the projection of the eyelashes which have been buried along with the transplanted flap.

ON THE ACTION OF HEAT IN CENTRAL ATROPHY OF THE OPTIC NERVES.—Dr Segal of Odessa (*Viestnik Ophthalmologii*, Jan.-Feb. 1890) after giving the history of a case of progressive atrophy of the optic nerves, in which the application of hot fomentations to the eyes and nape of the neck was always followed by very considerable temporary improvement of vision, makes some suggestive remarks as to the use of heat and cold in the deeper affections of the eye. He considers that these simple therapeutic agents, which are often found to be so useful in the treatment of disease in other parts of the body, have been too much neglected in the case of the eye. Cold, according to Segal, is indicated in all cases of active or passive hyperæmia of the retina and in beginning retinitis; heat, on the other hand, wherever it seems desirable to increase the blood supply to the retina, as in night-blindness, embolism, and atrophic conditions of the optic nerve and retina.

EVISCKERATION AS COMPARED WITH ENUCLEATION.—Evisceration as a substitute for enucleation was practised in New York in 1874 and the following years for some time. The operation can only be said, however, to have received any general attention since it was so strongly advocated by Professor Graefe of Halle some years ago (1884). Dr Fowler, who had some experience of evisceration at the time when it first came into vogue in America, now makes a comparison between it and enucleation, the result of which is entirely in favour of the latter operation, which he considers is under all circumstances the best. It has been claimed for evisceration (or exenteration, as it is called in other countries) that it provides a better stump for the artificial eye, that it is unattended with any danger for meningitis, and that it is more easily and more quickly performed. To these claims Fowler makes the following objections: the resulting stump is often irritable and causes an



irritation of the other eye, while irritability in the stump left after enucleation is never met with. Again, the question of meningitis can hardly be settled as yet, as the number of eviscerations performed is so extremely small compared with the number of enucleations, while even after the latter cases of meningitis are very rare. At all events one meets with much greater disturbance, chemosis, and pain after evisceration than after enucleation. These symptoms were only absent in five out of Fowler's 26 cases, and in one case there was a phlegmonous inflammation of the orbit. The operation, far from being more quickly performed, generally takes longer than enucleation, and causes much more bleeding.

**TREATMENT OF DETACHED RETINA.**—Little more than a year ago a method of treating cases of detachment of the retina was advocated by Schöler of Berlin, which consisted of injecting into the vitreous a drop or two of tincture of iodine. The effect of this proceeding was to cause more or less inflammation of the retina, which in some cases led to a re-attachment, and according to Schöler improvement of vision. The treatment is not altogether safe, as it is difficult to regulate the degree of inflammation produced. A modification of Schöler's method is now recommended by Abadie of Paris (*Annales d'Oculistique*, vols. 102-6). The fluid used is only half as strong, and is injected, not into the vitreous, but into the sub-retinal space after the serum has been allowed to escape through a puncture made with a Graefe's knife. In this way Abadie claims to have cured cases of detached retina. So many different methods of treatment have been advanced for this affection without obtaining any general support, that some confirmation of the results got by Abadie must be awaited before his method can be relied upon as being of any real value.

**OPTIC ATROPHY AND THE DROPPING OF FLUID FROM THE NOSE.**—Professor Berg of Stockholm (*Nordiskt Medicinskt Arkiv*, 21-1) contributes two cases which are of interest in connexion with this rare and obscure affection. The first was a case of osteoma of the frontal sinus, occurring in a man of 37. The sinus was opened and thirteen tumours successfully removed. During the operation the dura mater was laid bare over a large extent. The patient recovered. He suffered during his illness from great headache, which was occasionally relieved by a copious discharge of clear fluid taking place through the one nostril. The second was a case of an unmarried woman who some ten years before had begun to observe a defect of vision. For six years she was treated by Dr Anton Bergh for progressive optic atrophy. The headaches seem, however, only to have begun, or at all events to have become severe the year before she first saw Professor Berg. At the same time or shortly afterwards some exophthalmos gradually showed itself, and this was followed by a discharge from the nose of a fluid which at first thick and bloody, afterwards became clear with a slight yellow tinge. The discharge was most copious when after lying down for

some times she got up and held her head forwards. A couple of pocket-handkerchiefs might then be rapidly saturated with the fluid. At the same time the discharge afforded some relief. Later on it became less frequent, so that weeks might pass without its appearing at all. The sense of smell was also affected, the patient not being able to smell either iodoform or carbolic acid. In 1886, Professor Berg performed the following operation:—After removing the right eye, an incision as far back as possible was made in the soft parts of the orbit, which were then, with a periosteum scraper, freed from the underlying lamina papyracea, a small portion of which, about a square ctm. in extent, was removed with the chisel. Through this opening the chisel was introduced into the posterior ethmoidal cells, and with a few light taps the anterior wall of the sphenoidal sinus broken down. This caused a gush of clear yellow fluid which completely filled the orbit, and which pulsated synchronously with the heart. The patient made a rapid recovery, but did not regain sight or smell. The ophthalmoscope had shown a completely atrophic condition of the optic nerves. The left eye, however, retained perception of light. Owing to the formation of granulations a retention took place some time afterwards, with a return of the old unbearable headache. Berg, therefore, made the opening so free that he was able to introduce a finger into the sphenoidal sinus, which he found only moderately dilated, and apparently healthy. The subsequent use of a silver drainage tube proved perfectly successful. A reference is made to the literature of this subject, the eleven previously recorded cases in which optic atrophy and the escape of clear fluid from the nose took place are shortly given in abstract. Taking these cases into consideration, and comparing them with the result of his own experience, he comes to the following conclusions:—(1.) In some of the cases the flow of liquid from the nose has been due simply to an abnormally wide communication between the sub-arachnoidal space and the lymphatic network in the mucous membrane of the nose. The presence of lacunæ in the floor of the skull probably plays an important part in these cases. Possibly the Pacchionian granulations normally existing around the sinus cavernosus may gradually lead to perforation of the bone, and thus be the source of the discharge. (2.) In other cases an increase of intracranial pressure has been the primary cause of an abnormal dilatation in the lymphatic communication referred to. This has caused lymph-angiectasis in the nasal mucous membrane with exudation or rupture. (3.) In other cases, again, there is no reason to assume a primary increase of intra-cranial pressure, the flow of lymph depending in such upon a disproportion between the flow of lymph from the brain to the mucous membrane of the sphenoidal (or frontal) sinus, and the escape from that cavity which gives rise to a lymph stasis in the cavity. (4.) The cerebral symptoms which such cases present, chief of which is the bilateral optic atrophy, are not

necessarily due to any increased intra-cranial pressure at all. They may be explained in accordance with Deutschmann's theory, on the supposition that irritative substances originating from stagnation in the frontal or sphenoidal sinuses penetrate into the sub-dural and sub-arachnoidal spaces and their ramifications along the optic and olfactory nerves.

## SURGICAL PERISCOPE.

By A. G. MILLER, F.R.C.S.E.

**TREATMENT OF LEG ULCERS.**—"Dr Appenrodh, of Clanthal, introduces a new method of treatment for ulcers of the leg. After washing the leg he uses mild massage, beginning at the knee and working downwards, which produces an exudation of lymph in the ulcer, and a cure rapidly results. Pure lanoline is recommended as a dressing in preference to that charged with antiseptics which ordinarily produce irritation."—*The Times and Register*, Philadelphia.

**EPICYSTOTOMY** is the name now given to suprapubic opening of the bladder. Dr Davis of Birmingham, Alabama, recommends the operation in all cases in which exploration, drainage, or intra-vesical operations are necessary. He has tried Trendelenburg's method of elevating the pelvis in order to see into the bladder, but does not prefer it to the flat-back position. He recommends the establishment of an "Epicystic fistula" by leaving the wound open, in cases in which permanent drainage or an artificial urethra is necessary, also in cases in which intra-vesical applications are necessary.—*The Journal of the American Medical Association*.

**TWO RARE DISLOCATIONS** are reported by Dr Lewis A. Stimson of New York: 1. Dislocation of the lower end of the ulna forwards. The injury was caused by the sudden descent of a dumb waiter on the back of the hand and wrist. "The hand was in complete supination, and could not be pronated. The normal prominence of the ulna at the back and side of the wrist was lost, and on palpation the ulnar border of the lower end of the radius and the portion of the upper posterior border of the carpus corresponding to the ulna could be distinctly traced. The relations of the carpus to the radius and metacarpus were unchanged. Above the latter was a deep depression, in front of which on the front of the wrist the lower end of the ulna could be felt. The triangular fibro-cartilage could not be recognised. Reduction was easily made, with a distinct snap, by forced pronation combined with pressure backward upon the ulna and forward upon the radius. The dislocation could be easily reproduced by supinating the wrist and pressing the ulna forward." 2. Dislocation of upper end of fibula outwards and forwards. "Thomas C., twenty-four years old, was admitted to Chambers Street Hospital, April 10, 1889. Shortly before admission he had

sprung sideways to the sidewalk to avoid a horse, and, his feet slipping to the left, he had fallen upon his right side. He felt sharp pain at the right ankle and then below the right knee on the outer side, and, on passing his hand over the latter region, felt an unusual bony prominence. The head of the fibula could be easily recognised by the eye and touch projecting on the outer side of the leg, with the tendon of the biceps showing prominently as it curved downward and outward, its convexity directed forward and somewhat inward. The upper, outer, anterior, and posterior surfaces of the head of the fibula could be palpated readily. The distance from the head to the tuberosity of the tibia was one centimetre less than on the other leg, and the circumference of the limb just below the patella was one centimetre greater than on the other side. The skin showed no contusion. As the region was extremely tender on pressure, ether was administered, and then reduction was easily made by pressing the head of the fibula backward with the thumb, while the knee was flexed at a right angle. The bone returned to its place with a distinct snap."—*New York Medical Journal*.

"THE ALLEGED ANÆSTHETIC EFFECT OF ARTIFICIAL LOCAL ANÆMIA.—The increased anæsthetic powers of such alkaloids as cocaine and erythrophlœine, when injected into a part that has been rendered bloodless by means of Esmarch's bandage, or some other contrivance to accomplish the same end, have been said by some to be more apparent than real, the anæsthesia being alleged to be really due to the anæmia alone. To settle the point, Karewski, of Berlin (*Therapeutische Monatshefte, Deutsche Medizinal-Zeitung*), has tested the sensibility of parts that have simply been emptied of their blood, without being subjected to the action of any drug. He finds that certain paræsthesiæ are caused, but that the sensibility to heat and cold is unimpaired, that the tactile perception is sufficient to enable the subject to distinguish the contact of a blunt object from that of a pointed one, and that the sensitiveness to painful impressions, far from being suspended, is rather intensified. Anæmia, then, is not an anæsthetic."—*New York Medical Journal*.

EMPYÆMA OF ANTRUM AND NASAL POLYPUS.—Prof. Bayer of Brussels reports 6 cases. He thinks that the polypi cause the empyæma. He washes out the antrum with an antiseptic solution by means of a silver catheter, after removal of the polypi. Recovery is usually rapid.—*International Journal of Surgery*.

EXCISION OF KNEE-JOINT FOR STRUMOUS SYNOVITIS.—Prof. John A. Wyeth of New York describes his method of operating thus : "With the leg straightened out, an incision is made across the centre of the patella, and down on each side until the level of the posterior surface of the tibia is reached. These points must be low in order to secure free drainage. The skin flaps or cuffs are now dissected



and rolled up until the upper one is turned back from 2 to 3 inches, the lower about  $1\frac{1}{2}$  inches. As the flaps are held well away by assistants, the operator cuts down to the femur through the tissues, parallel with the attached edge of the reflected flap, lifting everything from the anterior aspect of the femur and its condyles together with the patella, the attached fringes, ligamentum patellæ, and coronary ligaments—thus clearing in one mass all the tissues which envelop the anterior three-fourths of the joint. By sharply bending the knee the crucial ligaments are exposed and divided, the lateral ligaments cut away, and the disarticulation effected. In stripping the attachments of the ligamentum posticum Winslowii from the tibia and femur, the operator should closely hug the bone and thus avoid wounding the vessels. This dissection should extend about  $\frac{3}{4}$  inch below the level of the tibia and  $1\frac{1}{2}$  inches above the lowest surface of the condyles. Determining now the amount of bone necessary to be removed, a cloth retractor is applied so as to protect the soft parts from detritus or injury, and a slice thick enough to freshen the head of the tibia is sawed away, as nearly as possible parallel with the normal plane of the articular surfaces. Should the section expose a focus of disease which dips down into the bone, this should be cleared out with a scoop or Volkmann's spoon, and finally mopped with a strong bichloride solution (1 to 500). The section through the end of the femur should now be made. It follows that if the limb is to be straight in the position of ankylosis the sawed surfaces of the two bones must be parallel. I have found it of great value to employ this method. By pulling on the foot the limb is fully straightened, and the articular surface of the femur separated from the sawed surface of the tibia. If the operator will now start the saw into the femur, sighting by the flat face of the tibia, the instrument will cut directly parallel with this. If by error the section of the tibia has been slightly oblique, that of the femur will have a like obliquity, and therefore the bones will fit snugly with the extremity straight. The next step is to dissect away with forceps and curved blunt scissors all the diseased capsule. This should be done thoroughly, and even the bursæ that communicate with the joint should be cleaned out. If care is not taken a portion of the sac which extends up beneath the quadriceps tendon will not be removed. All bleeding points should be tied with catgut, and all hæmorrhage stopped. The bones are now brought in exact apposition, and while so held the steel drills are introduced. I usually carry two of these in from below upwards, passing them through the skin about two inches below the sawn surface of the tibia, and directing them obliquely through the tibia into the femur. When the end of the drill has reached the compact surface of the femur, it is stopped, the handle unstripped, and the drill left in position. Three are used, one on either side from below, and one directly down the median line from above, entering the femur and passing into the tibia. As

the leg is now held steady the edges of the wound in the skin are sewed together with catgut, and two short bone drains inserted at the inferior angles. I no longer use rubber drains. Twists of catgut will suffice."—*International Journal of Surgery*.

**SURGERY OF THE KIDNEYS.**—Mr Knowsley Thornton, in concluding his second lecture before the Harveian Society of London, says, "Before leaving the operations of puncture and of lumbar nephrotomy let me briefly summarize the results of my experience. I would restrict the use of puncture as follows:—1. To decide in doubtful cases between solid and fluid tumours of the kidney. 2. To relieve painful distension when nephrotomy for some special reason is not at once advisable or possible. 3. To remove urine, or serum, or pus from a very large tumour, to reduce its bulk during the performance of nephrectomy. 4. As a tentative attempt at cure in some cases of simple cyst or of hydronephrosis, though the chance of cure is, I think, very slight. 5. To localize the position of renal or circum-renal abscess, when the physical signs are not clear enough for free incision. In such cases to be immediately followed by free incision when the pus is found. 6. To gain time, and relieve the harmful tension in some cases of calculous suppression. I would restrict the use of nephrotomy—1. To cases of calculous suppression, in which incision seems preferable to mere puncture, with the chance of being also able to remove the stone, *i.e.*, if further experience shows that this is a safer and better operation than my combined method. 2. For the cure, by subsequent drainage, of simple cysts, abscesses, and hydatids. The question of possible cure in some cases of hydronephrosis to be further tested. 3. For the cure, by subsequent drainage, of traumatic pyonephrosis or pyelitis, and in the early stages of tubercular suppuration. 4. For the possible cure of more advanced calculous or tubercular suppurations, when the patient will not submit to nephrectomy. 5. For the performance of nephrolithotomy in some cases, if extended experience shows that this procedure possesses any advantages over the combined method, or when those who have no experience in abdominal surgery are compelled to operate."—*Lancet*.

**TREATMENT OF HYDROCELE.**—"The former status of the treatment of hydrocele may, therefore, be said to have remained unchanged by the large amount of clinical experimentation which during the past few years has taken place, and that the spirit of the surgical world is that—(1), aseptic tapping is the best palliative measure; (2), iodine injection is the most reliable non-cutting radical treatment; (3), aseptic incision with drainage is an invariably certain and safe procedure, and always to be preferred where choice lies with the surgeon."—*Philadelphia Medical News*.

**LUMBAR VERSUS ILIAC COLOTOMY.**—Mr Bryant, in his Bradshaw lecture, urges the claims of lumbar colotomy "in order that the old

paths be not blotted out by new without a good reason, and that change should not be mistaken for improvement." He says that the iliac operation is not appropriate when the colon and abdomen are distended, and there are urgent symptoms of obstruction. The evil of prolapse of the bowel at the artificial anus is imaginary in his experience (170 cases) of the lumbar operation. He considers that the toilet of the anterior opening is not more conveniently managed. He considers that the iliac operation has only one advantage, viz., that it must be performed at an early stage. Too many of the profession, he says, especially of its medical side, look upon colotomy as a mere *dernier ressort*. Of his operation cases nearly one-half died within a month of those who were operated on under urgent symptoms, while of those operated on earlier "not one died within a month." Some patients survived for several years.—*Lancet*.

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### PERISCOPE OF PUBLIC HEALTH.

By HARVEY LITTLEJOHN, M.A., M.B., B.Sc. (Publ. Health), F.R.C.S.E.

By the death of Sir Edwin Chadwick one of the most prominent and enlightened of sanitarians has passed away. As early as 1829 he published an essay on "Preventive Police," which attracted the notice of Jeremy Bentham, then in his eighty-second year. This led to an introduction and friendship which had great influence on him, and which continued till Bentham's death in 1832. Chadwick threw himself heart and soul into all matters relating to the health of the people, and his first public appointment was that of Assistant Commissioner on the Poor Law Commission of 1832. His later labours are too well known to need recalling, and it is a remarkable fact, as showing the energy of his mind and unflagging interest in all sanitary matters, that as late as May 24th of this year an address by him was read at the meeting of Public Sanitary Inspectors of Great Britain. In it he upholds the value of good sanitary inspection, and the necessity for the appointment of a central authority, a minister of Public Health, who can guide and direct sanitation in all its departments. He makes also some remarks in regard to the London police, which it may not be out of place to repeat at the present juncture. "From the date of the establishment of the police force I have taken a deep interest in its sanitary welfare. I was bound to do so, because one of my earliest essays was on the organization of that force. It would be a great consolation to me if I could now report that the health of the police is as good as it ought to be. This is far from being the case. I find that the privates of the Metropolitan Police Force have excessive sickness, and that men having an average of 25s. a week pay as much as 6s. and 7s. a week rent for unexamined and insanitary property."

YELLOW FEVER AND PURIFICATION OF SEWAGE.—On account of

a prevailing opinion in Rio de Janeiro that the imperfect purification of the town sewage was the cause of the frequent outbreaks of yellow fever there, a bacteriological examination of the sewage was undertaken. The sewage is purified by precipitation with a mixture containing lime, alum, iron, and charcoal, and after settling in tanks, the sludge is converted into cement, while the clarified sewage is allowed to flow into the sea. In the sewage before treatment there were on an average 700,000 colonies of micro-organisms to the cubic centimetre. In the effluent after precipitation there were only 380 per cubic cent. In the same quantity of sea water from the harbour there were 526 colonies, and near the sewer outfalls 640. From these results the author holds that the method of sewage treatment employed is not responsible for the present unfavourable sanitary condition of the town.—W. Havelburg, *Centralblatt für die Med. Wissen.*, June 21, 1890.

IN England and Wales during the year 1888, some 700,000 vaccinations were performed by medical practitioners, public and private, and in the course of the year representations were received by the Local Government Board from ten sources, alleging injury of one kind or another to have resulted from vaccination. Inquiry by medical inspectors showed two of these cases to be measles and whooping-cough concurrent with vaccination, two to be skin eruptions following on vaccination, and the remainder to be cases of erysipelas or similar disease.—Dr Buchanan, *Local Government Board Report*, 1888–89.

**TOXICITY OF RESPIRED AIR.**—Professor Lehmann and Dr Jesser have published a paper from the Hygienic Institute of Wurzburg, dealing with the supposed poisonous properties of expired air, and more particularly with the results obtained by Brown Séquard and D'Arsonval in their experiments published in 1888. It will be remembered that these two experimenters condensed the moisture of expired air, and got a clear alkaline fluid which reduced nitrate of silver and acted as a powerful poison to various animals whether injected subcutaneously or inhaled by the lungs. Lehmann and Jesser have repeated these experiments, with the result that they find this condensed fluid to contain a small amount of ammonia and chlorine, and a minute proportion of organic matters which could not be estimated. No alkaloidal reaction could be obtained. The experiments on animals also failed to confirm Brown Séquard's results. In conclusion, the authors say that although man undoubtedly gives off during respiration traces of organic matter which may belong to the unstable alkaloids, yet at present it is not possible to state anything definite about their nature or poisonous properties.—*Archiv für Hygiene*, x. 3.

**DR REUSS**, in an interesting paper on the Bakehouses and Restaurant Kitchens of Paris, states that their sanitary condition is in the



large majority of cases deplorable. They are for the most part small, dirty, unventilated, and insufficiently lighted, so that gas has to be burnt continually. The result is that the mortality among those employed in them is high. There are four or five chief affections which decimate their ranks. The first and most deadly, directly and indirectly, in its results is alcoholism, then follows anæmia, pulmonary tuberculosis, rheumatism with its various manifestations and sequences, dyspepsia combined with both acute and chronic affections of the liver; lastly, varicose veins and ulcers, hernia, and affections of the skin are very common. The author could not substantiate the statement of Gubler, that cooks were specially subject to the diseases of hot climates, and among the many persons he examined he did not find the great flaccidity of the skin and relaxation of the scrotum which are said to be characteristic of inhabitants of tropical regions.—*Annales d'Hygiène publique*, June 1890.

CAUSATION OF SCARLET FEVER.—Dr Johnson, in a paper read before the Medical Society of the county of Kings, gives the results of his researches on the causation of scarlet fever. He began *de novo* searching for germs in the skin of scarlet fever patients, and succeeded in isolating a motile bacillus on every occasion in the desquamated skin of more than a dozen different scarlet fever patients. On looking into the literature of the subject, he found that Drs Jamieson and Edington had discovered an identical bacillus. As a result of his own exhaustive analysis, he is of opinion that "the germ of scarlet fever is thus probably known, and as Dr Jamieson first pictured it correctly, although he did not prove it, in justice to him it should be named the Jamieson bacillus." Dr Johnson is a strong advocate of corrosive sublimate in the treatment of the disease, and states that by its free use he is able to practically prevent desquamation.—*Brooklyn Medical Journal*, June 1890.

IN the final report of the Royal Commission on the sanitary condition of Melbourne, the result of extensive experiments conducted by Dr Katz on the influence of lime on the vitality of typhoid bacilli are given. If lime be added in the proportion of 1 to 10,000 (or seven grains to the gallon) to unfiltered water (Yan Yean river) contaminated with typhoid bacilli, a three hours' exposure suffices to kill all the typhoid germs. A copious sediment collects at the bottom of the vessel, and the water above is left brilliantly clear. Dr Katz does not recommend that the lime should be added at the Yan Yean reservoir, but that each householder should have a small tank, into which a measured weight of lime, preferably slaked lime, should be introduced in the proportion of 7 grains to the gallon, and after allowing the mixture to stand for three hours, that the clear fluid should be run off. The Commission, however, do not agree with Dr Katz in recommending the adoption of this somewhat cumbrous process. The experiments further tended to show that

if the water supply is kept free from organic pollution, any germs of typhoid fever which gain access to it will probably speedily perish; while slight animal pollution may suffice to enable the germs to maintain themselves, or even to multiply in the water.

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## Part Fifth.

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### MEDICAL NEWS.

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ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—The following candidates passed their final examination for the triple qualification in Medicine and Surgery at the sittings held in July 1890, and were admitted L.R.C.P. & S. Ed., and L.F.P. & S. Glasg.:—Alexander Charles Harkness, India; Frederick Maurice Graham, Monmouth; Benjamin Francis Powell, Madras; Campbell Rutherford Adams, Croydon, Surrey; Samuel Greenwood, Dublin; Margaret Elizabeth Pearse, Madagascar; George James Napthine, Melbourne; William Rae, Glasgow; John Warburton Wilkinson, Queen's County; Ralph Anthony Bull, Cork; Annie Catherine Wells, India; Harrison Rubidge Ross, Quebec; Kemlo Robert Macdougall Wilson, Airdrie; Thomas Edygar Jones, Llanelly, S. Wales; Arthur Edmund Shepherd, Adelaide; Robert Gascoigne Taylor, Middleton, Lancashire; William Walton Robinson, Chesterfield; James Craig Bass Graham, Omagh; Henry Ringrose Gore Haynes, Douglas, County Cork; Albert Edward William Burns, Chatham; Alexander Vincent Bowen, Bretherton, Lancashire; Douglas Wilson Wright, Mallow; Frederick Albert Capps, Portsmouth; Leslie Frank Bucknell, Sydney; Francis Edward Hodder, Cork; Richard James Arthur Berry, Upholland, Lancashire; Owen Wilmott Morgan, Ceylon; James Joseph Foley, County Cork; Morgan Crofton Hopkins, Meath; Thomas Parkin Blades, Westmoreland; and Frederic William Weber, South Africa.

LISTON VICTORIA JUBILEE PRIZE.—The Royal College of Surgeons of Edinburgh having, by the generosity of His Excellency Dr Robert Halliday Gunning, been enabled to institute a Triennial Prize of £100, called "The Liston Victoria Jubilee Prize," open to all Fellows and Licentiates of the College, for the greatest benefit done to Practical Surgery by any of these during the triennial period, appointed a special Committee for the adjudication of the Prize for the triennial period to 20th June 1890; and the same was awarded to Robert Lawson Tait, 7 The Crescent, Birmingham, a Licentiate and Fellow of the College.

THE ALVARENGA PRIZE of the College of Physicians of Philadelphia, consisting of one year's income of the bequest of the late Señor Alvarenga, of Lisbon, has been awarded to Dr R. W. Philip, of the Victoria Dispensary for Consumption and Diseases of the Chest, Edinburgh, for his Essay on Pulmonary Tuberculosis, which will be published by the College.

WE have received from H. K. Lewis, London, an autotype picture of John Hunter. As a work of art it is excellent, and we can recommend it to those of our readers who desire to possess a striking portrait of so distinguished a man.

PASTINE.—Macaroni and Vermicelli have long been familiar, but this preparation of Semolina, compressed into the shape of melon seeds, and called Pastine, is less well known. It has been indeed occasionally put into soup by way of ornament—more frequently on the Continent, however, than in Britain. Messrs S. de Pinto & Son, Commercial Street, Leith, have sent us for trial a quantity of this Pastine, which they state is made from the finest of the wheat grown in the province of Puglia in Italy. We have found that it makes delicious puddings when prepared according to the directions given with the sample. For all cases where the digestion is weak, or those in which pyrexia is a prominent symptom, and where a light, nutritious, and attractive article of dietary is desiderated, Pastine will be invaluable.

PEPSALIA.—This is an excellent substitute for ordinary table-salt. It contains great peptonizing power, and pleasant to take. It is a powerful aid to digestion, and is a preparation we can confidently recommend. The specimen was sent by Messrs G. & G. Stern, London.

BULLOCK'S ACID GLYCERINE OF PEPSINE, AND BULLOCK'S PEPSINA PORCL.—Specimens of these preparations have been sent us, and we have much pleasure in stating that they are preparations at once pleasant to take and at the same time possessed of great medicinal virtue.

CAFFYN'S LIQUOR CARNIS is a preparation which is yet destined to take a foremost place among our foods for invalids. It is both nutritious and easily assimilated.

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### A RUSSIAN VIEW OF EDINBURGH SURGERY.<sup>1</sup>

IN 1885 Professor Tauber paid a visit to this country, the result of which has recently appeared in a work on English and Scotch Schools of Surgery. The Professor has some very gratifying things to say of our British Schools, and particularly of Edinburgh, a town which he thinks is too seldom visited by Russian medical men. Among the chief peculiarities of our institutions he notes the position held by our great corporations; the management of our hospitals by mixed boards of medical and non-medical directors; the devotion of our hospital physicians and surgeons to suffering humanity, which leads them, while carefully observing all the phenomena of a diseased organism, to put the good of their patients in the first place; and the conservatism displayed in regard to

<sup>1</sup> "Modern Schools of Surgery in the Chief Countries of Europe" (*Sovremennyya shkoly chirourgyi v' glavneischich gosoudarstvach evropy*), by Dr A. C. Tauber, Professor in the University of Warsaw, and Surgeon to the Military Hospital in Warsaw (published at St Petersburg 1889), Vol. I., English and Scotch Schools.

operations involving physiological loss to the body, such as excision of the thyroid gland, larynx, walls of the bladder, etc., and displayed also, he thinks, in the statistics of amputations, the number of these being smaller than would be expected from the number of traumatic injuries. Some very just remarks are made on this conservatism, which Prof. Tauber does not think can be inspired by a mere dislike to anything new, particularly when one remembers the operations on the brain and spinal cord which have been introduced and practised by British surgeons. He traces it in part to old traditions, in part to the teaching of John Hunter, who held that every operation involving a mutilation was a confession of the imperfection of our art, and partly to the greater applied anatomical knowledge of English and Scotch operators.

He is struck by the opposition shown in many of the English hospitals to the practical application of Lister's teachings, and while giving all credit to the distinguished surgeons who have not considered it necessary to adopt these, he points to the fact that the doctrine has met with support in Edinburgh and other Scotch schools, "where the scientific side of the medical art stands on a higher level than it does in general in the London schools." Of diseases which seemed to him peculiar to British clinics, he found in the London hospitals aneurism, stone in the bladder, curvatures of the spine and extremities especially common, and in Scotch Schools in addition the results of rachitis.

In the 17th chapter of his book Prof. Tauber gives a lengthy account of the University and Extra-mural Schools of Edinburgh, the Colleges of Physicians and Surgeons, and of various student societies. He speaks with admiration of the harmony existing between the University and Extra-mural Schools, which enables them to work together under the same hospital roof, "a thing which with us in Russia would be considered impossible, or at least undesirable."

The 18th chapter commences with a glowing account of Edinburgh hospitality. The author seems to have visited Prof. Chiene's clinic before any of the others, and was especially gratified with his reception. He gives in full the speech made by Prof. Chiene when introducing him to the students in the operating theatre. In speaking of the methods of this clinic he says, Mr Chiene is more of a Listerian than Lister himself. In the theatre "an immense steam spray widely bedewed the operating platform with carbolic acid. Round the operating table were placed here and there vessels with a solution of carbolic acid for the washing of hands of all standing near the table. On the operating platform there were only the operator and two or three assistants. Neither the servants nor nurses nor bystander were admitted to the table. At the front window on a glass slab were placed protective silk, yellow carbolized gauze, rose-coloured salicylic wool, pink macintosh, bandages, etc. All these absolutely clean, and placed in plain glass



jars." Of Prof. Chiene as a teacher he evidently thinks highly. "Everything," he says, "testifies to the fact that his audience is specially well disposed to him. The students willingly attend his clinical lectures, which he conducts in a scientific and practical way." Summing up the chief features of the clinic, they seemed to him to be the strictness with which the antiseptic system was carried out in its entirety, the attention paid to the principle of non-irritation of the tissues, the conservatism of the teacher, and the attention paid to students' necessities, his desire being "to give them an opportunity of becoming acquainted with the ordinary forms of surgical disease, and to inspire them with a love not so much for bloody operations as for conservative treatment in general. And actually Professor Chiene in going round the wards with his students discusses with as much attention cases of fracture of either extremity as cases of injury to brain, removal of tumours, excision of internal organs, etc." To one thing only does Prof. Tauber raise objection, and that is what he conceives to be the too liberal use of carbolic acid.

Professor Annandale's clinic is described in the succeeding chapter. It will be news to the Professor that he occupies the *second* chair of Clinical Surgery; but one can see how the error has arisen. He "is an operator in the first place. He performs operations often and willingly. His wards are filled with patients suffering from cancer of the breast, skin, and face, and suchlike neoplasms requiring operative interference. It is to be noted that such a clinic presents material more suited for the neat hands of the operator than for clinical instruction. This is the reason why the theatre of Prof. Annandale appeared to us to be less willingly frequented by students than was Prof. Chiene's. The operative technique of Prof. Annandale is sure, bold, and artistic, but far from instructive to one commencing to study surgery. At his operations he is generally assisted by young graduates and not students. The first row of seats close to the operating table is occupied by medical men, chiefly Americans." At this time Mr Annandale had given up the use of the spray. Prof. Tauber was anxious to ascertain whether this modified Listerism produced in Mr Annandale's hands results different from those obtained by Mr Chiene, but was unable to do so from the absence of published statistics.

After the University wards Prof. Tauber visited those of the then Senior Acting Surgeon, Mr Joseph Bell, whom he styles "the official Lecturer to the University and Principal of the Extramural School." The glowing language he uses in speaking of Mr Bell's clinics indicate that they made a most favourable impression upon him. They were, he says, extensive and sought after by doctors and specialists in surgery as well as by students, to whom Mr Bell was extremely cordial and sociable. In walking the wards he demonstrated each case thoroughly, and examined the

patients in presence of the students, going carefully into the family history as well as that of the disease or injury. In the theatre Prof. Tauber sat contentedly for two hours listening to the demonstrations of cases and teaching of diagnostic methods. Though Mr Bell had at that time discarded the spray, the cases of operation which Prof. Tauber saw went on without a hitch and unattended by fevers, excepting one of excision of the mamma in an old woman, in whom the wound suppurated. His statistics as published in the *Edinburgh Medical Journal*, and as seen from the ward-books to which Prof. Tauber was given access, showed results fully equal to those of the first German clinicists, such as Volkmann, Bergmann, and Billroth. Out of 120 amputations, 5 died; of 22 important resections of joints, there was not one fatal result; of 43 operations for diseased bone, only one case was fatal. Of 517 operations performed during six sessions, there were 19 fatal results, giving a percentage of little more than 3·6, and comparing very favourably with statistics published by other surgeons and other schools. Prof. Tauber adds to his account of Mr Bell's clinics a short notice of his published writings, and commends his practice of publishing his statistics.

A review of surgical teaching in the Infirmary in 1885 would have been incomplete without some notice of Dr Keith's department. His wards and methods are succinctly described. His wonderful success is attributed to the absolute cleanliness of his wound treatment, and the extreme care with which he carries out the technique of ovariectomy.

In addition to the Infirmary the Anatomical department of the University and the Museum of the Royal College of Surgeons were visited. At the former there seems to have been some bargaining regarding an exchange of Scotch and Russian skulls. Many of the preparations in the Surgeons' Museum are described in detail.

An account of the graduation ceremony, in which the successful candidates received the "blessing" of the Rector, closes the chapter. "In consideration of the Rector's advancing years the speech ordaining the young graduates was continued by the Dean of the Faculty, Prof. Fraser." It is said to have been a lifelike dissertation in which the meaning and value of the degrees were impressed on the assembled visitors. The orator "animadverted to the instruction and scientific affairs of the University, comparing it with others of Great Britain, and impartially showing that it was the home of pure knowledge,—standing second to none, not excluding London,—for it had given birth to such famous scholars as Charles Bell, Liston, Ferguson, Joseph Lister, and many others, distinguished representatives of the Edinburgh School of Medicine."

## OBITUARY.

## THE LATE DR DAVID GREIG, DUNDEE.

It is with great regret that we have to record the death of Dr David Greig, long so well known in the profession in Dundee. The son of a much respected father, he was born in Dundee on June 16, 1832, and was educated in his native city. He commenced the study of Medicine at Edinburgh University in November 1849, and soon took a high position as a respected and distinguished student. He graduated as M.D. in 1853, and at the same time passed as Licentiate of the College of Surgeons. Having been first-prize-man in the anatomy class at the College of Surgeons, he was selected for the Demonstratorship, and in 1853-4 and 1854 was chief Demonstrator of Anatomy in the University, under Dr Struthers, who was acting as substitute for Professor Goodsir. There must be still not a few members of that very large class who remember Dr Greig's efficient and kindly services. He was Resident Physician's Assistant in the Edinburgh Royal Infirmary when the Crimean war came, and was selected by Professors Syme and Simpson to proceed, along with some other distinguished Edinburgh graduates, to the hospitals at Scutari, for which they left on almost a day's notice in October 1854. They were over-worked, and one after another went down with fever. His companions, Dr Alexander Struthers and Dr Sydney Wason, died, and Dr Greig's escape from the same fate, from typhus fever after his removal to hospital duty at Kululi, was a narrow one. He was attended in the illness by Dr Heron Watson, who then had his own turn of it. These were very sad times at the hospitals at Scutari, large numbers of the wounded and sick arriving from the battlefields of Balaclava and Inkermann. Among the valuable lives lost to Edinburgh in that war many students of that time will recollect with affection the name of Dr Richard James Mackenzie, Lecturer on Surgery, who died of cholera four days after the battle of the Alma, after rendering heroic services to the wounded. On his convalescence Dr Greig was sent to the front, and served as Staff Assistant-Surgeon, and as Assistant Pathologist to the Army in the Crimea with Dr Aitken, now Sir William Aitken of the Army Medical School. Dr Greig served till the end of the war, being present at several bombardments, and received the Turkish and Crimean medals. On his return to this country he was stationed for some time at Portsmouth and at Chatham, but soon resigned the army to carry out his intention of settling in practice in his native city.

By his ability in surgery and his sterling qualities Dr Greig at once took a good position in practice, and made his way to the foremost place in the profession in Dundee and the surrounding dis-

trict. He was long attached to the Dundee Royal Infirmary as Surgeon, and afterwards as Consulting Surgeon. He was also Certifying Factory Surgeon and Admiralty Surgeon for Dundee, and when the 1st Forfarshire Rifle Volunteers were formed he was one of the first surgeons of the regiment. In 1878 he was appointed Examiner in Surgery in Aberdeen University as colleague to Professor Pirrie, and after the usual three years' term of office had expired, his services in that capacity were again in requisition as substitute for the Professor during Dr Pirrie's illness.

As a man, Dr Greig's character was that of guilelessness, uprightness, and common sense, with contempt for all affectation, and brightened by a cheerful and kindly disposition. As a practitioner he was therefore open and honest with his patients, making no mystery or pretence, going to the point at once, and telling them in a few words his opinion and what they were to do. He was not much a giver of drugs, having an intelligent faith in the *vis medicatrix nature*, trust in which his renowned teacher of Practice of Physic, the late Professor Alison, used to inculcate. In serious cases and in emergencies Dr Greig was a man of resource and decision, and was frequently called in consultation by his professional brethren. He was a cool and safe operator, for which his anatomical experience stood him in good stead. Among other papers he published, in this *Journal*, "Treatment of Gunshot Fractures of Femur," 1857; "Ligature of Carotid Artery for cure of Intra-orbital Aneurism," 1862; "On Insufflation as a Remedy in Intussusception," 1864. Although not a man fond of speaking at meetings, Dr Greig was influential in movements concerning the welfare and honour of Dundee, and held a highly-respected position as a citizen. He took a warm interest especially in the management of the Dundee Industrial Schools and in the Baldovan Asylum for Imbecile Children.

After over thirty years of constant work and of almost uninterrupted good health, Dr Greig was induced early in the year to take a holiday tour with friends to Egypt, and on his way back paid a special visit to the scenes of his old Crimean labours and risks. Writing to a friend, he reported that he found the Scutari graveyard, where so many of our countrymen lie, walled in and carefully kept as a beautiful cemetery garden; but the one at Kululi less so—only one of the six hundred graves named. He returned in the beginning of April, and in a letter to a friend early in May, giving an account of these scenes, he spoke of his being in perfect health. But on May 28th symptoms of typhoid fever appeared, and by the end of the second week the case became complicated with jaundice. There was a tendency to failure of the heart, and the case terminated fatally on June 27th. How he had caught the typhoid infection was not known. Dr Greig bore his long illness with his usual cheerfulness, and was conscious to the last. He was constantly



attended by his son Dr David M. Greig and by Dr Sinclair, and was seen in consultation by Professor Gairdner of Glasgow and Dr Heron Watson of Edinburgh. The funeral took place on July 2, at the Western Cemetery, and was largely attended by members of the medical profession and by the general public, amid every mark of respect for so long and honourable a life.

## PUBLICATIONS RECEIVED.

- ALEX. ATHANASSIO.—Des troubles trophiques dans l'hystérie. E. Lecrosnier et Babé, Paris, 1890.
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# Part First.

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## ORIGINAL COMMUNICATIONS.

### I.—THE OPPORTUNITIES OF THE EDINBURGH MEDICAL STUDENT: AN ADDRESS TO THE MEDICAL GRADUATES OF AUGUST 1st, 1890.

By ALEXANDER RUSSELL SIMPSON, M.D., Professor of Midwifery and the Diseases of Women and Children in the University; President of the Medico-Chirurgical Society of Edinburgh, etc.

GENTLEMEN,—In America such a day as we are now passing through is called "Commencement Day." The class, which some years ago set out on its curriculum, has run its college course. That its members have run successfully has not been settled here and now. That was finally determined elsewhere some weeks ago. The function of to-day, in one sense, crowns the runners; in another, it but sets them at the start on that real race for which all previous efforts have been, as it were, preparatory trials. The close of the University life marks the day when a new and independent life is ready to begin.

Two years ago Sir William Turner told the graduates their capping-day was like a wedding-day. From my point of view it may be likened to a birth-day. At any rate, in *The Saints' Tragedy*, Kingsley makes Elizabeth speak thus as a newly-wedded bride:—

" Ah ! poor self !  
Thou took'st this for the term and bourne of troubles—  
And now 'tis here, thou findest it the gate  
Of new, sin-cursed infinities of labour,  
Where thou must do, or die !"

During the half-hour that, as your Promoter, I address you, I must regard you as a company who have come up to the line whence you are prepared to start on your true career. I am sure you come to it with minds well made up to run not as uncertainly. I ground my confidence on the qualities already displayed in these preliminary heats by the men whom their American cousins would name after their graduation year, "The '90 Class." I had heard from colleagues, before whom they appear in earlier years, that there were men of exceptional ability and promise amongst their number; and I had occasion in my own class to remark that an

unusually large proportion took honours in the class competitions, and with averages unusually high. The Ettles Scholar of your year has won his distinction with a record that during the twenty years of my professorship I have only four times seen equalled and only once excelled.

### RETROSPECT.

It will not be amiss for you, just where you are, to think of the opportunities you have had to prepare yourselves for your life career. I shall not detain you by dwelling on the special facilities for the study of the science and art of Medicine offered you in this University. The time for that would have been before you set foot within its gates. Its medical equipment was never more complete than it is now. What is expected of the men trained in it you may gather from some sentences in almost the last of Marion Crawford's tales. The heroine is smitten down with jungle fever at Simla, and an American journalist, interested in her fate, inquires of a Hindu gifted with quite transcendent powers—"Will Miss Westonhaugh recover?" 'No,' said Ram Lal, 'she will die at sundown.' 'How do you know, since you say you are no prophet?' 'Because I am a doctor of medicine. M.D. of Edinburgh.' 'Why can you not save her, then? A man who is a Scotch doctor . . . might do something!'"

It has been your supreme function, during your sojourn here, to learn how to take your place successfully in the ranks of the great army which is battling with disease and death all round the world, and to comport yourselves worthily of an institution to whose alumni East and West alike thus look for high achievements. But I take it you mean to be men and not mere medical drudges. There is a tendency, I suppose, in every profession to make its votaries its slaves. Certainly, in our profession the risk is great for those who follow it to become so exclusively engrossed in its pursuit as never to attain their full all-round development. We trace with interest the influence of exercise or the want of it in promoting the power of organs or in causing their arrest or atrophy, and forget that all the while there are organs and powers within ourselves that lie undeveloped and unused to our abiding, —yes, to our unending loss.

### THE ATHLETIC CLUB.

I.—When I was a student there was nothing in the University provision to suggest that we were to be turned out as more than medical machines. There was, for instance, in my time no Athletic Club and no gymnasium. In your happier day this want has been supplied, and your teachers have been glad to see able men taking their place in the football team at an international match, or enrolled among the heroes of the cricket field. Of course, the temptation is near to spend time in this

direction that might be more profitably employed otherwise; and the ambition to excel in some feats of muscularity may even tempt a man to efforts that will damage instead of developing his physique. As yet the risk among us from this quarter is of the smallest; and the very existence of an athletic club does good, apart from the benefit accruing to those who take an active part in its exercises. It calls the attention of those who are to have charge of the health of a community to the need there is to make due provision in the training of the young for the proper balance of mental and muscular development. Now that every child is compelled to submit to some school training, it will more and more become the duty of medical men in general practice, who must take oversight of the recreations as well as of the maladies of the people, to note the influence of undue strain upon the nervous system, and to insist on the apportionment of time in every school for such amount and variety of physical exercise as will keep the children at the highest possible standard of health.

Some years ago an old alumnus of Amherst College gifted to his alma mater a gymnasium in which the students may enjoy every variety of muscular exertion. The Professor of Physiology and his assistant take stock of the vital condition of each freshman who comes up to College. He is weighed and measured in every possible direction; he is percussed and auscultated, and has prescribed for him the amount and kind of exercise most suited to his constitution. The weighings and measurements and general investigations are noted and repeated from time to time throughout his college course. All the men are compelled to attend a daily drill as regularly as any of the class lectures. It has been found that whereas, in former times, the freshmen were the healthiest, and evidence of deterioration in strength was seen in increasing sicknesses and irregularity of attendance in the successive years, till the men of the fourth year were the sickliest, the conditions have now become completely reversed. The vitality and vigour of the men improves year by year, and instead of being lessened, the insurance value of the student's life has distinctly increased by the time his curriculum is ended. It were greatly to be desired that such a happy result could be brought about in every college and in every school. It will come about when our profession has made up its mind as to its necessity. Make up your individual minds about it and help it on, so you may have the satisfaction of seeing it fulfilled before your life-work is at an end.

#### THE VOLUNTEERS.

II.—In my student days the Volunteer movement had not yet begun. We may welcome the signs that bid us hope the day is near when the fierce arbitraments of war are to give place to peaceful arbitrations; but we only expect that it will come all the sooner to a



population well prepared for the defending of their homes. In any case, many of you feel already that the hours you have spent on the parade ground have not been wasted. Some of your companions idled them aimlessly away. With better judgment you gave the leisure hours to the evolutions of the 4th Company of the Queen's Edinburgh Rifle Volunteer Brigade, of the Edinburgh City Artillery Company, or of that recently instituted Volunteer Medical Staff Corps which is still more germane to the work of your profession; and you find your reward in precision of mind and eye, and hand and foot, that will fit you all the better for the battle of life. For a man who has taken efficient part in these services cannot fail to come out of them with a mind drilled to prompt obedience to the call of duty, an eye accustomed to accuracy of measurement, a hand skilled to deft and firm manipulation of the sick and hurt, and a step disciplined to the march that carries the flag of freedom round the world.

In this connexion, one is tempted to dwell on the unwisdom of the military authorities in withholding from medical officers in the army that definite rank which is believed by those who have the best means of knowing to be necessary for the maintenance of the status of army surgeons, and the want of which is sure to act as an obstacle to the entrance of the abler members of our profession on that otherwise honourable field of service. But you and your fellow-students have already sent a memorial to the War Office on the subject. Let us hope that this will so enforce the representations which have been made by all the Medical Corporations of the United Kingdom, that the War Ministry may soon see its way to meet the just expectations of men who place high skill in the art of healing at the service of Her Majesty's forces by giving them a position that will command the respect of officers and men in all other departments of the army.

#### THE UNION.

III.—Again, in my time there was little opportunity for students holding social intercourse. Scattered units in the main, dispersed in solitary lodgings, when they wished to cultivate the friendship of their fellows they had to make the opportunities for themselves. Yet hardly less important than the education that is imparted in the class-room is the mutual influence exerted by fellow-students upon one another. When they meet in friendly intercourse they draw each other out in directions where their special studies would never lead them, and develop in many ways faculties that had otherwise lain dormant, and powers that would otherwise have gone to waste. There was always, to be sure, the old-established Royal Medical Society; but, in addition, the various Colonial Clubs, the Musical Association, the Hall, the Chalmers Settlement, and, above all, the Union, have come in recent times to offer a sphere for the cultivation of friendship and the development of social qualities that are calcu-

lated to tell for good on all the after life. I emphasize the value of the Union, for there men of the different Faculties have occasion to meet together and impart to one another the ideas and habits that most effectually guard against the formation of a one-sided character. There association with compeers devoted to other pursuits keeps the medical student alive to the wide range of subjects that must engage the interest of educated men, apart from those to which his life is dedicated. There he will learn to entertain respect for men of diverse ways of thinking, to maintain friendly relations with men of different avocations, and from amicable discussions upon political questions he may emerge into society prepared to do good service in keeping one class in the community from imagining that peers are all black sheep, and another from regarding all radicals as revolutionaries. You have the *entrée*, remember, into every order of society, as you daily follow in the track of disease and death on their equal-footed visits to the halls of the rich and the humbler dwellings of the poor, and you will do well to learn betimes to pay due reverence to all.

The cultivation of interests in this direction may even be carried farther afield; and in these days of freer communication between land and land, it may become easy for young Scotsmen to follow the customs of their predecessors of some centuries ago, and widen their horizons by forming friendships and receiving some part of their education at foreign Universities. If you read Mr Hume Brown's scholarly biography of the illustrious Humanist and Reformer from whose habiliments, as "old tradition teaches," was formed the magic cap by the aid of which the Chancellor transformed you into graduates, you will find that George Buchanan spent some of his years of study as a bursar in the Scots College at Paris. It may interest you to know that this Scots College, which has been in abeyance for a century, is about to be resuscitated; and if some of you are minded to spend a profitable season of study at Paris, it is quite possible that you may be able to find a home there in the coming winter.

#### THE REPRESENTATIVE COUNCIL.

IV.—Once more, in the work of the Students' Representative Council, there is a sphere for the development of qualities that may prove in later years to be of inestimable value. Here, of course, as in other spheres, the student may misuse his opportunities. A man may imagine himself a heaven-born reformer, and with much fuss and fluster set himself and others the task of disarranging and rearranging all around him, and teaching everybody else his duty; till at the examination-room it is found that he has forgotten the chief end for which he came to College. He thinks he could have saved the University Commissioners their much trouble if their duties had devolved on him; but in the meantime his examiners are in some doubt as to whether

he will be able to distinguish between a case of scarlet fever and one of measles, or will know what to do for a patient who is like to die of hæmorrhage. But where one man will abuse his opportunities to the detriment of himself and others, a hundred will get good and do good in devoting some portion of their time to the study of the questions that concern the general well-being of the institution of which they form an integral part—which exists, indeed, for their behoof, and in the full efficiency of which they have the deepest interest. They get to realize that they are something more to each other than chance atoms, having an occasional and transient class-room contact; they get pervaded with the *esprit de corps* that becomes an inspiration to present effort and a pledge of permanent interest; and they train themselves in business habits that will fit them for service in after years on Municipal and County Councils, School Boards, and even, it may be, in the highest Council in the land—spheres in which the members of our profession have, perhaps, been heretofore the more reluctant to play a part, because of the want of such training as the Representative Council now affords.

#### THE TEMPERANCE ASSOCIATION.

V.—Further, some of you have had the wisdom, and, I shall add, the courage to be members of the Total Abstinence Society. You have proved in your own experience what you also have been learning from your studies, that alcohol is no indispensable element in the daily diet of a healthy man. You will not be long in practice before you will prove also these five things:—

- (1.) That alcohol, habitually used, can of itself produce disease from which the abstainer remains exempt.
- (2.) That it will aggravate diseases to which all are liable.
- (3.) That it renders those who habitually use it more open to attacks of various forms of illness.
- (4.) That the alcoholic has a worse chance of recovery from a fever or an injury than an abstainer; and
- (5.) That in the crises of disease the alcoholic gets less benefit from stimulants than the abstainer.

Those of you who have enjoyed the benefit of Dr Clouston's lectures have already had glimpses of the disastrous effects on the nervous system of undue use of alcohol; and all of you will do well to study his recent papers on "Diseased Cravings and Paralysed Control" in the *Edinburgh Medical Journal*, from which you will learn that some of the woe-some victims of alcohol, morphia, chloral, and cocaine have been drawn from the ranks of the professions. So you will go out to your medical practice with the conviction that it is clearly within the line of your professional duty to help forward any healthful movement for reclaiming the habitual drunkard, and to strengthen the hands of those who are striving to make it easier for all men to keep sober. Moreover, you will

be scrupulous how you prescribe, or even sanction, the employment of stimulants and narcotics in individual cases. For there is this always to be remembered in regard to the use of alcohol—that on the one hand all kinds of patients and their friends, teetotal and all, will ask you if they may not take some form, some little measure of it; and hardly one of them will ever think of asking you if it isn't time to be dropping that prescription.

### THE WHITE CROSS SOCIETY.

VI.—Then in the work of the White Cross Society, questions have been brought before you which fall especially within the province of our profession, the importance of which will force themselves upon you with growing urgency with the increase of your professional experience. If it is well for you to have had among you in your student days a society which recognises that obedience to the law of temperance is important for the health of the individual, it is also well for you to have been impressed with the conviction that obedience to the law of continence is essential to the health both of the individual and of the race. You are going out into a world where you will find the rudest and crudest ideas regarding the marriage relations propounded month after month in widely-circulating periodicals, in essays emanating from writers with piquant pens, but with somewhat muddled minds and sometimes muddy morals. One month, a litterateur, who has caught the ear of many readers, devotes an article to applauding a democracy which will “allow the widest latitude of marriage, divorce, rearrangement, modification,” and that is not a slave to what he is pleased to call “the unimaginative, business-like bourgeois conception of the relation of the sexes.” The following month, a pen in a woman's hand is not ashamed, unwomanly, to write thus:—“A union, really true to the ideas of marriage, never works smoothly, unless one or both of the yoke-fellows surrender what is strong and individual in the character. Indeed, to be quite frank, a thoroughly prosperous marriage (always granted that it be not achieved by conspiracy in rebellion) brings about—or rather is brought about by—a gradual process of brain-softening, which does much to deteriorate the raw material of society. . . . It is not yet recognised that what makes the ‘holy estate’ so firm and inflexible are its atrocious injustices—to use no harsher word—and that if one firmly uses the surgeon's knife to these, he destroys nearly all that holds the thing together.” And in the succeeding month you may read the digest of a novel in which the hero says,—“In the fourth year of our marriage we jointly came to the conclusion that there was no hope of our ever being able to understand each other, to agree with each other, so we ceased to make any further attempt to come to an agreement. . . . We were two prisoners, hating each other, and chained together: we poisoned each other's lives, and tried to shut our eyes



to what we were doing. . . . 99 per cent. of all married people are plunged in just such a hell as mine."

Where sentences such as these are circulating in a population too largely pagan, it becomes more than ever the duty of the student and master of the laws of health to acquaint himself with the true conditions for the normal propagation of the race. If you have learned the lessons of physiology aright, you will take your stand in a slippery time on the law of the Permanent Union of one with one, mutually consenting and openly contracting; for you must have learned that monogamy alone insures a numerous and healthy progeny; whilst polygyny, polyandry, promiscuity, and other communal forms of union, produce a dwindling population of deteriorating members. You will maintain that the same standard of morality is to be applied to both the sexes; and when proposals are ventilated for meeting the pathological consequences that follow from infringement of the laws of physiology, you will be jealous of any suggestion that tends to the degradation of women, for this reason, if for no other, that when the bounds of physiology are overstepped in this direction, it is usually not the woman, but the man, who is the principal in the transgression.

And at fitting time, despite the quips of Mr Grant Allen, and the quirks of Mrs Mona Caird, and the crankinesses of Count Tolstōi, you will do well to adorn your doctrine by your practice, and exchange your "diggings" for a home. But what, you ask, may be the fitting time? Four and thirty years ago the Promoter for the year advised the graduates all to get married early, telling them they would not be in all respects thoroughly qualified to take part in the sympathies of the family of another until they were rich enough to possess wives and children of their own. Their companions of the following year were warned, on the other hand, by their Promoter against the dangers of an early marriage, with its possible consequent hindrances in the way of progress. What were they to think of it all? I may tell you that for one of them it was his clearest duty for two years not to think of it at all. These were still years of further study. They were spent mainly in foreign schools, and he knew that all that time his continued education was a heavy strain on the resources of his parents. Then followed seven years of an in-door assistantship at a salary of £100 per annum, during which, you will agree, it had been still unwise to give much thought to the marriage problem. It was when these terms of filial duty and of service were succeeded by the years of independent practice that the question as to a wife began to assume an aspect of immediate urgency; and if your experience corresponds with his, you will find yourselves at such a time beset on many sides with all kinds of advice. When the wisest man he knew approached him on the subject, he tried to fence the question off by quoting the many and diverse counsels that had been volunteered to him regarding the choice of a wife, but got for reply,

"It is time for you now to be getting married, all the same. What you have to mind is that you take a wife who will always please yourself." He took his father's advice. He has never rued it. He commends it now to you.

### A CHRISTIAN UNIVERSITY.

On the opportunities you have had in these various directions for the development of the different parts of your being—physical, intellectual, and social—you are much to be congratulated; and in many a crowded city or rural district at home, in the army or navy, or in far-off fields of practice, the lessons you have been learning will be applied, not only to the lengthening of men's lives and the lessening of their pains, but also to the expansion of their minds and the elevation of their morals. Yet, even so, the list of your privileges is not exhausted. Those of you who listened to the last inaugural address delivered by our late Principal, Sir Alexander Grant, will remember how he dwelt upon the circumstance that the trend of thought and work within this University went to show "that the hope of the Christian is not an idle dream;" and all of you may read in his Story of the University how its first foundation stones were laid by Christian patriots, who, in an era of great impulses, exerted the mightiest influence for good upon the Scottish nation, and set the education of the Scottish youth amoving upon the most enduring and far-reaching lines of progress.

There are, in our day, among the sons of science, not a few who take up a negative position towards the transcendently important question of the ages—Can God make Himself known to man? They call themselves—sometimes in pride, sometimes with more of pathos—Agnostics. Such position, Gentlemen, would be unworthy those who have become physicians, and who have come under the spell of the spirit of the place where you have studied. Unworthy of physicians; for when Dante lifts his brow to look upon "the Master of them that know" and scans the lineaments of Aristotle's philosophic train, he tells us that a fourth of them bear names familiar in the household of healing; and surely they who would belong to the goodly fellowship of Hippocrates and Dioscorides, and Galen and Avicenna and Averrhöes, ought not to say, with regard to any department of human experience—"We are of them who do not know." You are serving yourselves this day heirs of the sages, and you will not lightly sell the noblest part of the inheritance.

Unworthy of physicians, I repeat; and again I add, unworthy of your University. If you have trod her courts untouched by the *genius loci*, you must at least bear witness that the master minds of the nineteenth century have felt its power and done it reverence. Perhaps there was never seen in history such a gathering of famous men as were found on this platform during the week when

the Tercentenary of the foundation of our University was celebrated. Men great in politics, in art, in literature, in all the sciences and spheres of enterprise, had come from all the seats of learning and all the centres of power in every quarter of the globe to take part in the celebration. Your Representative Council had the wisdom to ask that a forenoon should be set apart for the students, when they might gather here in their hundreds to see and sit for a little space at the feet of the men whom, from amongst that brilliant throng, themselves might think it most worth while to see and hear. So, with Lord Iddesleigh as your Rector to preside, and Lord Reay as President of the Associated Societies to make reply, there stood up before you in succession at your call a group of the heroes highest in every intellectual sphere in the passing generation. Two of them have already gone in to the Unseen, the not to them Unknown. Robert Browning was here, whom we laid with reverence at New Year time among our illustrious dead in Westminster Abbey; and Count Aurelio Saffi, Triumvir of Rome, who, at Eastertide, was followed to his grave at Forlì by twenty thousand of his countrymen—"not a town in Italy," said the newspapers of the day, "nor a public association of any kind, that did not send a representative to his funeral." It might have been anticipated that the Christian poet and the Christian patriot would speak to Scottish youth in sympathy with what is highest in the life of the Scottish people and of the Metropolitan University. So also would the versatile poet, philosopher, professor, politician, who at that time represented America at the Court of Great Britain. Mr Russell Lowell had made his German student

"know  
That God may still be met with;  
Nor groweth old, nor doth bestow  
These senses fine, this brain aglow  
To grovel and forget with."

But what, one wondered, would Pasteur say, and Virchow, Helmholtz, and Lesseps, a Dutch theologian and a Flemish sociologist? Surely nothing less than a Divine spirit guided Pasteur when he spoke of youth as the period of enthusiasm, to bid you take note of the Divine within you and make sure to cultivate it; and made Virchow warn you against building life and character and conduct upon hypotheses instead of upon facts and realities. How else were Helmholtz and Lesseps moved to give these fragments of autobiography, which showed that men who could lead their fellows into new fields of scientific research, or dig new channels for commercial enterprise, had not been able to control their own career, but had themselves been moulded for their work by the "Divinity that shapes our ends?" The orator of Holland, Professor Beets, calling attention to the open book in the centre of our University coat of arms, recalled how Sir Walter Scott on his dying bed requested to be read to, and

when asked, "From what book?" replied, "How do you ask? There is but one book;" and then went on to say, "The bravest student and the most learned scholar may come to a point when, after having read so many books, he may also say, 'There is but one book;' not because that one to which I allude, and the name of which you pronounce within your hearts—not because that book is a book of science or for promoting science, but because it is a book of wisdom, and of heavenly wisdom, preventing a man and a scholar from becoming a desperate thinker or a learned fool." While Professor Laveleye, who had been asked to speak the final word, pointed out that in studying the social sciences it was necessary not only to attend to facts, but to follow an ideal. "Know well," he said in closing, "that which is, but find out also that which ought to be. How attack the problem? Let me reply in two words, very humbly, what I think. Open on one hand—the left—the Economists, Adam Smith and Stuart Mill; but on the other—the right—open the Evangel. And if ever there be conflict, follow above all the Evangel, for between the good, the just, and the useful there can be no real contradiction. Remember that wonderful and profound word of Jesus, which, if it were listened to, would put an end to all our ills and discords,—‘Seek first righteousness, and all other things will be added unto you.’"

You had not all of you the privilege of being present at that memorable gathering; but you have all had opportunity, from time to time, in the Oddfellows Hall, to hear the claims of Jesus Christ put before you by a man singularly gifted to make us students of science hear every man "in our own tongue the wonderful works of God," in your meetings with Professor Henry Drummond. You may well set out, therefore, on your career with the assured conviction that, as the years at the University have been a preparation for the longer years to come, so these will, in their turn, be moulding you into fitness for a measureless future—that at the close of your life-curriculum there will come for you a Commencement Day that is the dawn of your individual immortality, when the segment of science you have delighted here to look at will round into the full-orbed circle, for that which is in part shall be done away, and you shall know even as also you are known.

What is truly worth the knowing both in the life that is and in the life that is to come, let your chosen poet, Robert Browning, tell you. He speaks in the *persona dramatis* of the last of the Apostles. They are the last academic words you are now to hear.

"For life, with all it yields of joy and woe  
And hope and fear,—believe the aged friend,—  
Is just our chance o' the prize of learning love,  
How love might be, hath been indeed, and is;  
And that we hold thenceforth to the uttermost  
Such prize despite the envy of the world,  
And, having gained truth, keep truth: that is all."



## II.—A CASE OF HOMICIDAL AND SUICIDAL INSANITY.

By FRANK ASHBY ELKINS, M.B., Assistant Physician, Royal Edinburgh Asylum.

WILLIAM W., aged 33, a married man, who had lately been a hall-porter, was admitted from the Calton Jail, by a warrant of the Sheriff, to the Royal Edinburgh Asylum, on April 26th, 1890, having made a homicidal attack upon a citizen of Edinburgh.

*Disposition.*—He was sensitive, cheerful, very excitable, rather proud, and sometimes quarrelsome.

*Habits.*—Although alcoholic, he led a fairly steady and industrious life till two years ago.

*Previous Attacks.*—These had been four, and all of them had occurred since November 1888. He had been treated at Londonderry, Perth, Greenock, and Edinburgh Asylums, having been discharged "recovered" from each asylum after an average residence of three months' duration.

*Hereditary History.*—A great aunt was insane, a brother was alcoholic and died of kidney disease, and a sister died of phthisis.

*History.*—He was the youngest child of his parents. As far as can be ascertained, his childhood and youth appear to have been normal. When a lad he had two severe falls from scaffolding, and after one of them he injured his back, and is said to have been unconscious for a few minutes. In 1874 he came to Edinburgh and was employed as porter and "boots" in various hotels. For the long period of eight years (1880 to 1888) he was hall-porter at the Liberal Club in Edinburgh, a position of some trust, and requiring a good deal of intelligence. The manager of this club says he did his work well, but that he was very excitable, and inclined to quarrel and fight when off duty, especially after taking a little drink, which "went to his head" and made him quite unreasonable and unmanageable. The members of the club speak highly of him, as having been obliging, attentive, and of agreeable manners, and he was very popular among his own acquaintances.

In 1885 W. consulted Dr John Playfair for "fainting fits," one of which he took in the doctor's consulting room. Dr Playfair knew W. well, and has some indistinct recollection of his becoming faint in the consulting room, but thinks he must have regarded the faint as a slight temporary heart weakness and nothing more.

During the general election of 1886 it was his duty to receive and post up a great many telegrams, and taking the keenest interest in politics, he became greatly excited, and behaved "crazy like." He was at last dismissed for drunkenness, but on account of his long service he was taken back at reduced wages. However, a short time after, he left the club of his own accord, and was then idle and drunken for several months, until at last, deciding to try his fortunes in the New World, he left Glasgow by the s.s. "Ethiopia" on the 8th November 1888.

Before leaving Glasgow he had a drink with some old friends, and during his first night on board he was sleepless and suspicious of his companions. He was afraid they wished to do something to him, and he thought they were going to torture him. Labouring under these delusions, next morning he deliberately attempted suicide by throwing himself overboard when off the coast of Ireland. By a splendid act of heroism, Dr D. Scott Moncrieff, a passenger on board, jumped over the side of the vessel and kept him afloat until both were rescued. W. was then taken to Londonderry prison, and ultimately to the asylum. Dr Hetherington has kindly supplied me with notes as to W.'s condition at that time. He was depressed, strongly suicidal, rather excited and restless, and fancied that he heard his wife's voice; but his memory was good, he was quite coherent, and could answer questions. He had a furred tongue, his heart's action was very quick, and the patellar reflexes were exaggerated. He was discharged quite well on 27th December 1888. W. himself says—"Whilst I was at Londonderry Asylum, I thought I was being drugged, and I believed I was being watched by Orangemen,"—the latter delusion, taking into account that he was a fervid Liberal in a disordered mental state, landed unexpectedly on the north of Ireland, was not very extraordinary. Leaving Londonderry, he went to live with his wife in Perthshire, and for a time did not drink at all, but suffered from "queer thoughts." One day he came into Edinburgh, took a good deal of drink, and returning to Perthshire, attempted to cut his throat, and thinking that his wife was urging him to cut his child's throat, he was greatly afraid he should injure it, and was most anxious to be sent to an asylum. He was then admitted to Perth Asylum, and Dr Campbell has kindly allowed me to make use of his notes. W. was then depressed, and had hallucinations of sight and hearing, and delusions of electrical agencies, and confessed to past suicidal impulses; there was partial forgetfulness of more marked maniacal outbursts, and Dr Campbell gathered the suspicion that while under the influence of drink he had epileptiform seizures. Otherwise he appeared an ordinary *Mania a Potu* case. After being in Perth Asylum for two months he was dismissed well, but soon became ill again, being suspicious of his wife without cause, and imagining that she never told him the truth. In consequence of these symptoms he was sent to stay with his brother in the Forfarshire hills, and was employed felling trees. He did not drink whilst there, but getting depressed and unsettled, he left and became for a short time hall-porter at a hotel in Inverness. The manager says he was quiet and unassuming, but rather absent minded. One morning W. asked the manager if he might leave, as he was insane. He said he felt depressed, and as if he were being hunted down. Getting work next at St Rollox Station, Glasgow, he attempted suicide by placing his head upon the rails

before an approaching engine, but was rescued by his fellow-workmen and taken to Greenock Asylum. By Dr Wallace's kind permission I am able to say that W. was then depressed, strongly suicidal, and had delusions that people were following him, and that everything was against him. Dr Wallace writes,—“Though unquestionably suicidal when brought to Smithston, it is remarkable that when affected with strangulated hernia, for which I had to operate on him, he showed the greatest eagerness to get well, and as a surgical patient I could not have had a better.” Leaving Greenock Asylum after four months' treatment, he went to Glasgow, and taking more drink, he was admitted, four days after leaving Greenock, to the Royal Edinburgh Asylum, having attempted suicide by throwing himself in front of a heavy van. On admission, he was depressed, suicidal, and with delusions that people were following him, and that he was going to be killed. He also stated that just before making the suicidal attempt he had a “fainting fit” similar to those for which he consulted Dr Playfair four years ago. His left forearm and hand were much bruised, owing to his suicidal attempt. A few days after admission he volunteered the statement that his muscles were urging him to do things which he knew were wrong. He made steady progress towards recovery, his delusions left him, and only for a day occasionally would he show any lowness of spirits. Ultimately after all signs of depression had gone, and as he was cheerful and working well, he was dismissed. He had been in the Asylum three months; he had been kept in a much longer time than would have been the case but for his history; his wife was urgent for his dismissal, and he himself thought it very hard lines to be kept in so long. Seven days after, he was re-admitted, having, in the interval, made the homicidal attack. His wife, who fetched him from the Asylum, noticed that he was strange in manner immediately after leaving. He was absent minded, and did not seem to notice her speaking to him. After a walk together, she was obliged to return to her work, and left him with sufficient money for immediate use. This money has been accounted for, and was not spent in drink. That night he went to the theatre, but says he did not enjoy himself, as he had the old suicidal longings, and the old ideas of being hunted. At the lodging-house where he stayed he was very uncommunicative, and the following day he appeared to have done little else but walk about in an aimless manner. He met his wife, who noticed he was worse and more depressed. He told her to go away and leave him to his fate, and when she left him he said—“This is the last time you will see me.” Being conscious of his state and wishing to be re-admitted, he twice on the following day came to the Asylum gate, and asked for Dr Clouston, who was unfortunately out. Meeting Mr N., whom he knew and whom he afterwards assaulted, W. conceived the idea of killing him, and bought an ordinary clasp pocket-knife for the purpose.







He had absolutely no ill-will towards Mr N.,—indeed, ten years previously Mr N. had been instrumental to some extent in getting W. his post in the Liberal Club. He walked about all that night and all the next day with the homicidal feeling uppermost in his mind, and quite replacing his suicidal desires. There is little doubt that he dogged Mr N.'s steps until at about midday, finding him alone and in Lover's Loan, a sequestered narrow lane in the city, W. rushed upon him from behind, threw him over, and stabbed him twice.

W.'s account is:—"I had queer thoughts; I thought everything was coming to an end; I felt I could not leave the city, and dogs kept me from getting work. When I looked towards Mr N. and determined to kill him, I felt happier and more satisfied, and as if I were doing right; the rain seemed to stop, and the sun got brighter; but when I turned away and was frightened to do the act, the sky seemed to darken and it rained."

During the attack W. never spoke a word, he appeared very confused, and had a determined, fixed, fierce look. After he had inflicted the injuries and had been disarmed, he sauntered quietly away without giving any explanation of his conduct. When arrested he was just going to the Infirmary to have his hand dressed, as it had received some slight cuts in the struggle, owing to the clasp knife closing upon him. To the police he gave a wrong name and was very reticent, but when taxed with the assault he admitted it. In the evening he told a detective that "Jesus Christ made him do it," and "when the electricity which comes in at my toes and runs up my body gets to my head then I do these things."

*State on Admission.*—He was depressed and nervous, and laboured under the delusion that dogs kept him from leaving the city, that he was being hunted down for crime, that electric shocks were going through his body, and that some evil-disposed persons marked him (showing some slight marks upon his skin). He was coherent, his memory was good, and he could answer questions. He was quite conscious of his insanity, and deplored his suicidal and homicidal impulses. In appearance he was a well-developed, muscular man, with a fine open countenance, which the accompanying portrait, admirably sketched from a photograph by Mr Williamson, will show. He had left internal squint, the eyes were placed rather near to each other, and as the outer orbital angles were directed a little upwards, he had a slightly Japanese expression. The eyebrows were continuous in the middle line, and the beard was very sparse and patchy. All the tendon reflexes were exaggerated, and he complained of numb and "electric" sensations. There were two scars upon the head, one upon the chin, and another over the seat of the strangulated hernia. The bodily health and condition appeared to be excellent.

Tried for the offence before the Sheriff, W. was sent to the

Lunatic Department of Perth Prison during Her Majesty's pleasure.

*Causation.*—His hereditary predisposition, his previous mental illnesses, his former alcoholic habits, and the falls during youth, all may have tended to produce the attack; but there is also the question as to whether he is an epileptic. The history of "fainting fits," the distinct "electric" *aura* preceding the homicidal impulse, together with Dr Campbell's suspicions as to his having had epileptiform seizures, all point in the direction of epilepsy. No doubt the alcoholic habits had much to do with the production of the first three attacks, but the last was certainly not so induced, and was probably the result of being sent from the controlling influence of Asylum life, when he had no home to go to and no work to occupy his mind. To him the Asylum was indeed a refuge, and he was fully conscious of its steadying effect upon him, as is abundantly proved by his two separate attempts to be re-admitted when he felt the impulse upon him, and by his frequent observation, during his last attack, that he felt "safe" in the Asylum.

*Notes on the Case.*—This is the case of a respectable man, who owing to his insane impulse has become a criminal lunatic, and he cannot be regarded in any way as an ordinary criminal; but there is much in common between his case and those of which the daily press constantly reminds us, where a parent, after a drinking bout, suddenly murders his or her children and then attempts or commits suicide. In his case the mental storm soon spends itself, and after being in an asylum for a short time, it would have been extremely difficult for a medical man to certify that he was insane, except for his history and his own conscious feeling that when he takes a little drink he loses all self-control.

Dr Clouston, in his book on *Mental Diseases*, writes—"Homicidal impulse is often spoken of by lawyers, publicists, and ignorant persons, as if it were a thing that did not really exist, but had been set up by the doctors to enable real criminals to escape justice." No better example than this case could be brought forward in proof of the real entity of the homicidal impulse.

One of the latest published books dealing with insanity from its legal aspects,<sup>1</sup> says—"The criminal premeditates his plan and of necessity selects his victim. The impulse has no premeditation, and has not of necessity a selection." W.'s case shows how ill some facts of Nature fit in with legal maxims. W. selected his victim, bought a knife, chose a quiet place for the assault, and gave a wrong name when arrested.

Such an attempt upon life is naturally alarming, and it was to be expected that the public would take a good deal of interest in the affair, and that panic views should find expression in the press. One daily paper,<sup>2</sup> after asking how it was that W. came to be at

<sup>1</sup> Williams' *Unsoundness of Mind*, 1890, page 211.

<sup>2</sup> *Scottish Leader*, June 7th, 1890.



large, goes on to say, that he having attempted suicide so frequently surely rendered him a case for detention.

Asylum officials have no right to keep a sane man in detention because of his having had an attack of insanity consequent on a drinking bout, and during the course of which he had attempted suicide.

Because a person is liable to become insane is no argument for continuous asylum detention.

It would be interesting to know for how long the writer of this article would take away the liberty of the subject under the above circumstances.

According to statistics taken in Morningside Asylum,<sup>1</sup> four-fifths of all cases of melancholia have the suicidal impulse, and thirty-nine per cent. have actually attempted the deed, many of the latter more than once, so that the size of asylums would have to be considerably enlarged if all these people are to be detained after their recovery.

### III.—NOTE UPON CONCEPTION WITH UNRUPTURED HYMEN,—

By W. MACFIE CAMPBELL, M.D., Liverpool,—

(Read before the *Edinburgh Obstetrical Society*, 9th April 1890.),

SOME months ago a young lady was brought to me, by a relative of the young man to whom she was engaged, as she had not felt well lately. Something about her appearance caught my attention as she entered the room, and I made inquiry as to her menstruation as soon as possible. She had not been unwell for three months, but that had occurred before—she was listless, tired, breathless, and did not know what she felt. She said she was always plump, and did not think her bust or figure increased.

Examination of the mammæ revealed dark areolæ, distended cutaneous veins, and a milky fluid was easily expressed from the nipples. By the stethoscope the foetal heart was readily detected. I thought it prudent to ask the relative to step into another room, and then told my patient that she was pregnant. I have frequently had to make such an announcement, but have never seen it received with such amazement and incredulity. "Utterly impossible," she said, but still with something in the expression which meant that there was a possibility. Still insisting, she told me that opportunity having twice offered, her fiancé had got into her bed, and had imperfect intercourse with her. No penetration nor attempt at penetration had been made. This was afterwards corroborated by the young man, whom I sent for. On examination, the blue appearance of the vulvar mucous membrane was well marked, and the hymen was perfect, but admitted the forefinger without causing much pain. The young man was so positive, that

<sup>1</sup> Clouston's *Mental Diseases*, p. 117.



I saw he feared some other paternity, but I could assure him that she was virgo (!) *intacta*. The parties were married soon after, and it was not until six weeks after that, that penetration was effected, with a sensation of rupture.

Some years ago I had two confinement cases within a few days, in which both husbands told me they could not understand their wives' pregnancy, as intercourse had never been perfect. In one case I had to divide the distended hymen bilaterally to allow the head to emerge; in the other there was no great difficulty in dilatation.

Dr Gooch (*Important Diseases Peculiar to Women*, Sydenham Society, 1859) relates a case of a lady privately married, in whom he diagnosed pregnancy, and was met by the statement of impossibility. Her husband had avoided injury to the hymen, and both considered pregnancy impossible. The event, however, proved Dr Gooch to be right.

In the *Medical Times and Gazette*, vol. i., 1876, Dr Braun, Vienna, gives three instances of the same. In the first case coition had taken place in a dilated urethra, and Dr Braun supposes ejaculation had taken place prematurely. Delivery took place without injury to the vagina, the hymen rupturing at the last moment. In the second case, a girl of 16 years confessed to one imperfect attempt at intercourse. The orifice in the hymen only admitted a goose quill. The third case was exactly similar in age and history.

Dr Braun draws the following conclusions briefly, that,—1st, An unruptured hymen is no proof of virginity; 2nd, An individual may exist as a virgin in the anatomical, though not in the gynecological sense; 3rd, Pregnancy is possible without penetration.

In the same journal, vol. ii., 1881, Surgeon-General Francis relates the case of an officer's wife, in whom pregnancy was declared impossible by husband and wife, the reason being a tense hymen, which had resisted penetration, and which only gave way after a long delay in delivery.

These cases are of great interest, as throwing doubt upon the theories of uterine activity in the act of impregnation, and of exact apposition of the orifices of the urethra and cervix as being necessary, and rather point to the entrance of the semen into the uterus, and further, as being due to inherent forces, or ciliary action of the vaginal mucous membrane.

*Edin med Soc*

#### IV.—NOTE ON LAMENESS AFTER HIP-JOINT DISEASE.

By JOHN CHIENE, F.R.C.S. Ed., Professor of Surgery in the University of Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th May 1890.)

IN bringing before you to-night for your consideration a few aspects of the progress of subacute cases of hip-joint disease, in which the patient is walking about during the course of the disease,

I have no wish to discuss the general question of lameness after hip-joint disease.

As we are all aware, when the hip-joint becomes diseased, certain changes take place with regard to the relative position of the limb with the body. At first we have rotation outwards with abduction of the limb, followed at a subsequent date by rotation inwards with adduction of the limb. This is accompanied by a twisting in the lumbar region of the spine—forwards in rotation outwards at the hip, backwards in rotation inwards at the hip. The patient does this in order to retain the parallelism of the two limbs necessary for stable equilibrium. The normal sequence of events then is as follows:—The tension in the joint due to effusion causes patient gradually to relax his ileo-femoral band. This he does by flexing the thigh on the abdomen and abducting the limb. At the same time he relaxes the ilio-psoas muscle by rotating the whole limb outward. The irritation in the joint helps to cause these movements on account of the nervous sympathy which exists between the joint and the muscles surrounding it. If patient wants to walk about with the leg in this position he must droop the pelvis towards the affected side in order that the foot may reach the ground, and at the same time rotate it forwards to bring the affected limb parallel with the other. This is what actually happens. As the disease advances the limb slowly assumes the position seen in backward dislocation of the head of the femur. The posterior part of the capsule is stretched, and the thigh being flexed, the head of the bone passes backwards, there is inward rotation of the limb, the knee-joint passes inwards, and now to maintain equilibrium patient must rotate his pelvis backwards, thus bringing the affected limb in a measure parallel with its fellow.

Thus, in the ordinary run of cases, rotation of the limb plus compensatory rotation of the spine plays the principal part in the movements. But in the cases which I wish to bring before you the rotation was a minor factor. The reason of this I am unable to explain. I must simply deal with the cases as I found them.

The *first case* is that of a little girl, illustrating flexion. J. C., four and a half years old. She had suffered from lameness for two years. There was ankylosis of the right hip in the flexed position; rotation almost altogether absent; no pain. When laid upon her back on a hard mattress it was found that the thigh was flexed on the abdomen at an angle of  $110^{\circ}$ . When standing erect, which she did with the aid of crutches, the right foot was raised six and three-quarter inches from the ground. On being told to bring the foot to the ground, by means of a rotation of the pelvis she diminished the distance to four and a half inches. Still further urged, she touched the ground with her toes, the heel being elevated two and a half inches, but this was done by a peculiar power she possessed of dorsiflexing the left knee, and by still further rotating the pelvis. Lastly, being persuaded to undo

the abnormal position of the left knee she stood with both feet on the ground, both knees bent, and the pelvis rotated forwards, producing a deep anterior curvature in the lumbar region. There was also a drooping of the pelvis of  $8^{\circ}$  from the horizontal towards the affected side. Conclusion—flexion with little or no rotation.

*Second Case.*—J. G., a boy, eighteen years of age, illustrating abduction. The diagnosis in this case was doubtful. It may possibly have been rheumatic. He had been suffering for six months from sciatic pains in the right leg, and now complained of that leg being longer than the other. He throws out the right leg in walking. The position he took up was that of the first stage of hip-joint disease, but he had no pain on pressure over the trochanters, and could stand on either leg without pain. He could walk a distance of three miles without any discomfort. His greatest trouble was in going upstairs. When standing with the feet together, the right knee is considerably flexed and the pelvis droops towards that side. On being asked to straighten the affected limb he did so, at the same time raising the opposite foot off the ground. In order to bring the pelvis to a horizontal position the affected limb had to be abducted, and it was then found to be four and a half inches from the ground, thus doing away with the apparent lengthening. The conclusion came to was that the hip was ankylosed in the abducted position at an angle of  $114^{\circ}$ .

*Third Case.*—I. T., a boy of sixteen, illustrating adduction. Had suffered from pain in his left hip-joint about two years ago. This case, occurring as it did shortly after the one just mentioned, seemed to be one of exactly similar nature. Patient when standing assumed the position of the first stage of hip-joint disease on the right side. He can walk considerable distances without discomfort; never failed to bring down the heel. Has a great limp. As in the last case, his chief difficulty is in getting upstairs. On analysis of the case the following facts were observed:—When standing with the left foot firm on the ground the right knee is bent, and the pelvis droops towards the right side at an angle of  $11^{\circ}$  with the horizontal. On straightening the right leg the left is raised from the ground, and the same droop of the pelvis is maintained. In order to bring the pelvis horizontal the left leg has to be crossed over the right, and is then one and three-eighths inches from the ground. When lying in bed patient lies with his legs crossed. Conclusion—Ankylosis of the left hip-joint in the adducted position at an angle of  $69^{\circ}$ .

In measuring the angle between the pelvis and thigh I have been greatly assisted by an instrument lent me by Mr Duncan. This instrument, however, has the disadvantage of being difficult to use in such a case as the first, namely, that of flexion.

Mr Russell, a clerk in my wards, has introduced a method of estimating the obliquity of the pelvis in the erect position, which is

also of value. There is great difficulty in estimating the obliquity when patient is lying. When standing, Mr Russell's instrument, on the principle of a spirit-level, is of great use.

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## V.—THE TREATMENT OF FLAT-FOOT.

By A. G. MILLER, F.R.C.S. Ed., Surgeon to the Royal Infirmary, and Lecturer on Surgery, School of Medicine, Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th May 1890.)

MR PRESIDENT AND GENTLEMEN,—The subject of flat-foot has acquired some prominence within the last ten years from the writings of Von Meyer, of Ogston, and of many orthopædic surgeons, both in England and America. To Symington we owe what is apparently the only account of the anatomical features of the deformity. Recently many papers and letters have appeared in the medical journals, which demonstrate that there are many different views held as to the treatment of flat-foot, and even as to its nature. I do not profess to be able to lay before you anything new or original, but I hope by my statement or demonstration to simplify the pathology and treatment of *pes planus*. If in so doing I have to go through some elementary and familiar details, I trust you will excuse and bear with me.

For my present purpose I will define flat-foot as simply the giving way of the arch of the foot. The inner and more important portion of this arch is composed of the os calcis, the astragalus, the scaphoid, the internal cuneiform, and the metatarsal bone of the great toe. All these are firmly united to one another, in a continuous sequence, by strong ligaments, except the astragalus, which has loose and movable connexions with the os calcis and scaphoid (more especially the latter), between which it is situated. This comparatively loose connexion is necessary to permit the various lateral movements of the foot to take place at what may be called in general terms, the ankle. The astragalus being pretty firmly wedged between the two malleoli, the rest of the tarsal bones, in lateral movements (pronation and supination) move upon it. In order to atone for this looseness of attachment of the astragalus, there are specially strong connexions between the os calcis and the scaphoid, so as to maintain the solidity of the arch of the foot. This is all the more necessary seeing the astragalus is, as it were, the keystone of the arch; and as the weight of the body is transmitted to the foot through it, it might, in its peculiar position, act as a wedge to break up the arch of the foot instead of strengthening it.<sup>1</sup>

<sup>1</sup> Symington (*Journal of Anat. and Phys.*, October 1884) has shown that an action of this kind does occur normally. He says (quoting Von Meyer), "When the sole of the foot is placed upon the ground, and pressure exerted upon the astragalus from above, its body glides forward upon the os calcis, while the head of the bone sinks downwards and inwards."



To support the astragalus on the inner side we find—(1), the *sustentaculum tali*, a projection from the inner side of the os calcis; and (2), a strong ligament, the *inferior calcaneo-scaphoid*. This important ligament passes from the sustentaculum tali to the under surface of the scaphoid, thus filling up what would otherwise be a gap of quite half an inch in extent. The head of the astragalus, covered with articular cartilage, lies on, but is not attached to it, a synovial membrane intervening. In fact, this ligament forms part of the capsule of the ball-and-socket joint which exists between the astragalus and scaphoid. On this ligament evidently the main strain falls when the astragalus is pressed downwards by the weight of the body (*vide* previous note). Of course a part is taken in maintaining the solidity of the foot by all the tarsal ligaments more or less, and support is also given by the various muscles whose tendons pass to the sole of the foot, especially the *tibialis posticus* and the *flexor longus pollicis*. The tendon of the former is in contact with the calcaneo-scaphoid ligament, and that of the latter passes forwards under the sustentaculum tali.

Now, if the arch of the foot is dependent on this calcaneo-scaphoid ligament, and if flat-foot is a giving way of the arch of the foot, any undue straining of this ligament may produce flat-foot; and this is done in the way that I have already indicated, viz., by the astragalus forcing asunder the os calcis and scaphoid, and so stretching the calcaneo-scaphoid ligament.

If I am correct, then the treatment of flat-foot is reduced to perfect simplicity. We have to *relieve the strain on the calcaneo-scaphoid ligament*.

Of course there is nothing new in this view. It is sometimes called the old view. To overthrow it Von Meyer, about ten years ago, declared that in flat-foot this ligament is not elongated, and that the inner border of the foot is not increased in length. He came to this conclusion by comparing normal with flat feet in living subjects. But Symington tells us, from a comparison of dissected feet, that in a case of flat-foot the length of the ligament was as 35 mm. to 22 mm., and 19 mm. in two normal feet. Besides, he says, "independent of measurements, the general increase in size of the ligament is quite apparent."

In support of this view let me remind you that in flat-foot pain is experienced in three situations—(a), on the inner and inferior aspect of the foot; (b), across the dorsum; and (c), on the outer side.

In the first situation the pain, which is always an early and prominent symptom, is elicited by pressure just behind and below the tubercle of the scaphoid, which is the position of the inferior calcaneo-scaphoid ligament. Symington has told us that in the specimen of flat-foot which he dissected (an aggravated case), "the cartilage covering the surfaces that articulate with the scaphoid and sustentaculum tali were normal, but that connected

with the inferior calcaneo-scaphoid ligament was thickened, softened, and in a few places it was completely destroyed, and the subjacent bone was in a condition of porosis." This condition he attributes to "irritation resulting from pressure against the ground." I would be inclined rather to attribute it to contact with an inflamed structure, viz., the calcaneo-scaphoid ligament. Symington does not mention whether that ligament showed signs of inflammation or not. But in the early stages of flat-foot the bone and cartilage cannot have suffered from contact with the ground, the pain is distinctly referable to the calcaneo-scaphoid ligament, and stretching is most likely to be the irritant.

The pain in the second situation (viz., across the dorsum of the foot), which is a somewhat later symptom, is due evidently to the pressure of the astragalus against the scaphoid after the normal relation of these bones has become somewhat altered. Symington says that this abnormal pressure may actually wear away part of the upper surface of the scaphoid.

In the third situation the pain is certainly due to pressure of the external malleolus on the os calcis. This is the result of rotation of the os calcis, and occurs in advanced cases. It is therefore a late symptom and a proof of aggravated flat-foot. Symington has demonstrated that at first articular facets form on the os calcis from the pressure of the fibula, but that inflammation and softening of the bone may take place later on.

In further support of this view of the pathology of flat-foot let me remind you that those who suffer from the deformity are those who have to stand much or to carry burdens. In such there is an undue pressure downwards on the arch of the foot. Again, in those who have a tendency to flattening of one foot only, it is the one on which they habitually stand that is affected. Ill-fed, growing children, also, whose muscles are deficient in power and tone, frequently are sufferers, because the additional support to the ligaments is wanting which ought to be given by the muscles.

How, then, can we take the strain off the calcaneo-scaphoid ligament? Of course making the patient avoid the upright position will do this. But those suffering from flat-foot seldom can or will lay up. It is necessary, therefore, that they should be instructed in some method of standing and walking that will take the strain off the inner side of the foot. This is most easily done by a simple method which I find was published in my father's *Practice of Surgery* in 1846. It is possibly much older, though it is claimed by two English surgeons as their own invention. It consists in making the sole of the patient's boot thicker on the inner than on the outer side, and in this way throwing the weight of the body more on the outer side of the foot. The *modus operandi* of this simple plan is easily seen on the skeleton, and it is indeed wonderful how very slight an inclination of the foot throws the line of gravity over to the inner or outer side. Many

persons suffering from commencing flat-foot naturally adopt this method and habitually stand on the outer side of the foot.

It has been demonstrated by Von Meyer and Symington that in the normal foot the centre of the astragalus is outside a line drawn from the heel to the ball of the great toe, and inside that line in flat-foot.<sup>1</sup> Any one, however, can move Von Meyer's line to the outer or inner side of the centre point of the astragalus by simply pronating or supinating the foot, and it is this power that is utilized in the above treatment. The result of the elevation of the inner side of the foot (by the wedge-shaped sole) is to place the centre-point of the astragalus on the outer side of the line, or, in other words, within the triangle on which the weight of the body is normally borne. This triangle, as described by Von Meyer, being the tip of the heel, the ball of the great toe, and the ball of the fifth toe.

It is easy to see that this alteration of the relation of the astragalus to the other bones of the foot relieves the inner at the expense of the outer side. It will take some strain off the calcaneo-scaphoid ligament, therefore, and will also prevent the contact of the os calcis with the tip of the fibula. But can the outer side of the foot bear the extra burden? It ought to do so, for the strain is distributed among a large number of ligaments, and the bones are arranged in such a manner that the transverse arch of the foot is brought into play; besides, the outer side of the foot is in contact with the ground almost throughout its entire extent normally.

Now, the second point in the treatment is support. How is support to be got for the calcaneo-scaphoid ligament? Some recommend mechanical means, such as a spring or pad in the boot, and there may be cases in which this treatment is useful. But in many instances the pressure on the under surface of the arch of the foot only increases the patient's discomfort. And one can easily understand how this is, if we are right in supposing that the calcaneo-scaphoid ligament is in an irritated condition from the abnormal strain thrown upon it.

The main support of the astragalus (on its inner and under surface), we have seen, is the inferior calcaneo-scaphoid ligament; the main supporters of it, in its turn, are the posterior muscles of the leg. If they are strengthened, therefore, the ligament will be relieved, more especially in walking. To tone them up a system of gymnastics must be adopted. Flexion and extension of the ankle-joint, circumduction of the foot when raised from the ground, rising on the toes several times in succession, and also walking on the toes, are good exercises. The last is useful also in

<sup>1</sup> In some normal feet the astragalus centre is slightly inside such a line. Symington calls this a mechanical tendency to flat-foot, and perhaps it is in such persons that the down-pressure in standing and carrying weights develops flat-foot.

taking the strain off the arch of the foot by transmitting the weight of the body more directly from the astragalus to the scaphoid. I trust that it is not necessary for me to dwell on the importance of toning up the muscles, and, indeed, of the whole system, in such cases as those of flat-foot, in which the deformity is the result of inability on the part of one portion of the organism to fulfil its function and meet the demand made upon it under, in some instances, even normal conditions. It is quite evident that all the constituent parts of the lower extremity are dependent on one another, just as the various organs of the body are. It is equally evident that the ligaments of the foot are very dependent on the muscles of the leg, and that when the latter are deficient in their duty there is extra strain put on the former.

I have devoted a considerable portion of this paper to a demonstration of how a slight mechanical alteration of the relation of the foot to the astragalus will benefit flat-footed persons. But I think that on the whole, especially in incipient cases, more ultimate good will be derived from devoting attention to the strengthening of the muscles of the leg and foot. Massage and such exercises as those I have indicated will be found very useful towards this end.

I have not dealt with the subject of diagnosis specially, having already published my opinions on this point in a clinical lecture which appeared in the *Edinburgh Medical Journal* for November 1889. Mr Ellis of Gloucester has honoured me by referring to that lecture in a paper contributed to the *Edinburgh Medical Journal* for January 1890. I find that he and I are agreed as to the importance of the muscles of the leg in the proper treatment of flat-foot, and also as to the way in which they ought to be trained and strengthened. Mr Ellis, however, does not approve of the method of throwing the weight of the body on to the outer side to save the inner side of the foot.

I will not attempt to deal at present with the question of what operation should be performed in aggravated cases of *pes planus*. Patients do not generally elect to undergo operations for mere deformities; but they are often willing to submit to anything for the relief of pain. Now, the pain in flat-foot ought to be relieved by the treatment to which I have referred. The supinated position of the foot and the strengthening of the muscles of the leg will take the strain off the calcaneo-scaphoid ligament, will prevent the contact of the os calcis with the fibula, and ought in time to restore the astragalus to its normal relation to the scaphoid. In very aggravated cases one might commence treatment by confining the patient to bed for a short time, during which massage might be employed. I have not yet performed any cutting operation for this affection. I will, therefore, wait till I have failed with the above treatment before I decide what special operation I will adopt.



## VI.—NOTE ON THE TREATMENT OF COLD ABSCESS.

By F. M. CAIRD, F.R.C.S. Ed., Assistant Surgeon, Royal Infirmary ;  
Lecturer on Surgery.

(Read before the Medico-Chirurgical Society of Edinburgh, 2nd July 1890.)

DURING the past few years various methods of treatment for large cold abscess have been introduced. These have had for their object the reduction of the somewhat protracted stay in hospital which has hitherto been necessary, as well as a corresponding diminution in the amount of dressing and the anxious care which such cases afford.

Sir Joseph Lister's plan of opening and draining the abscess with the most stringent antiseptic precautions, while at the same time continuous rest was obtained by means of the long splint, extension and careful nursing, was one in which the vitality of the surrounding tissues was called into play to react upon the abscess wall and cause its absorption.

The results as seen in his practice (*vide* Mr Watson Cheyne's *Antiseptic Surgery*) are simply unrivalled, and constitute an enduring monument to the training, zeal, and fidelity of his house surgeons and staff.

The time occupied in the absorption of the pyogenic membrane and in the cure of the associated caries is, however, often very lengthy, and the slightest mishap at dressing may undo the care of months. Attempts have therefore been made to obviate this by a direct attack on the unhealthy granulation tissue of the abscess wall, either by the introduction of suitable agents, such as iodoform, or by removing it with the sharp spoon, and endeavouring to get the raw surfaces to unite by means of judicious support, pressure, or buried sutures.

It is to illustrate what may be done by removal of the abscess wall and the attempt to get a union by the first intention that the following cases are recorded.

The method is briefly as follows:—The patient having been chloroformed and the skin shaved and carefully purified with carbolic lotion (1 to 20), the abscess is opened by a small incision, into which the finger is at once passed. The whole of the wall which is accessible is now scraped bare *with the finger nail*. It is easy to feel the pyogenic membrane peeling off in large flakes and shreds, and the finger readily recognises when a perfectly raw surface is left. If the entire extent of the wall is not accessible, a second incision is made, the first opening is plugged, and from the second aperture the remainder of the cavity is now scraped bare. It is advisable not to allow any pus to escape, since one can more easily strip off the lining membrane and judge of the thoroughness of the scraping when the abscess is distended.

With the finger-nail we may scrape away the granulation tissue

with impunity from off important structures, and the finger pulp tells exactly how much is being done and how much has to be done—in this respect differing widely from the sharp spoon, which cannot be used with the same freedom or accuracy.

The pus is now allowed to escape, and the cavity is thoroughly washed out with boiled boracic lotion, warm, until the fluid streams away clear and transparent. Very short tubes may now be inserted if need be, and a couple of sutures should be put in the wound, but not tightened up. The dressing consists of a large mass of moist gauze wrung out of carbolic lotion, and over that a large corrosive wool mass, secured in position by carefully-applied bandages of domet. Over all a piece of elastic webbing is carried, and the patient kept absolutely quiet in bed by means of suitable splints. On the following day the tubes may be removed and the stitches tightened up. Future dressings are determined by the rules common to antiseptic surgery.

### CASES.

I.—C. H., æt. 22, a nursemaid from Shetland, was admitted to the Royal Infirmary suffering from a large gluteal abscess. Family history and general state of health good. About two years ago she fell on the ice. The buttock then gradually became swollen; she limped slightly; complained of nocturnal pain, and lately has had starting of the limb. Prolonged rest and iodine applications have been tried without benefit. On examination there is found a large fluctuating mass, which lies under the gluteus maximus, and extends from the anterior superior spine to below the gluteal fold, causing the right buttock to project enormously. The abscess was opened, as above indicated, on 12th July. It was dressed on the 13th, 14th, 15th, 17th, 19th, and 21st. On the 23rd a collodion dressing was applied, and on the 8th August she left for Shetland.

II.—H. C., æt. 48, crofter, Shetland; family history uncertain. In March last, gaining the crest of a hill, he was blown over by a gust of wind. He was thrown on his hip, and experienced great pain in the thigh and spine. In June swelling of the thigh was marked. It was aspirated on two occasions, but latterly has rapidly increased. He is in poor health, has lost flesh rapidly, is rheumatic, and suffers from iritis. The abscess stretches from the lower third of the thigh upwards, and is lost and ill-defined beneath the gluteal muscles.

On 24th September the abscess was treated. Two incisions were requisite on account of the size of the cavity, and the finger was inserted and the wall scraped from one incision above the gluteal fold, and a second about the middle of the thigh. A long splint was applied, and daily dressings made use of till 27th September. On the 2nd October the long splint was removed. The limb was again dressed on the 5th October. A little serum was

found on changing the dressing on the 13th and 19th October. The patient left on the 24th healed.

III.—K. F., æt. 7, suffers from Pott's curvature and double psoas abscess. In the right groin there is a scar due to an abscess which was opened last year, and for which she was treated for eight months in an hospital. Each lumbar region and groin is occupied by a large fluctuating swelling. The abscesses are evidently distinct and separate, and do not communicate across the spine.

On January 1st, 1890, each collection was opened below Poupart's ligament; the finger was then introduced and the wall scraped as far as possible. A large bougie was then introduced, and the point made to project in the loin where it was cut down upon, the finger again inserted here, and the scraping of the upper portion of the cavities completed. The right collection contained pure serum alone; the left contained pus, and on the left side of the second lumbar vertebra a distinct hollow was found, from which were removed three small portions of necrosed bone. The walls of this depression were rather smooth and not distinctly carious. A double long splint was applied.

The patient had headache, diarrhoea, retracted abdomen, and dilated pupils for a day or two after the operation, and her condition gave rise to some uneasiness. It was thought advisable to dress rather frequently in this case from the risk of soiled dressings. On the 18th January the left side was sound, and on February 12th the right side was healed. She was kept in bed till March 18th.

IV.—J. M'K., æt. 16, sawyer, Killin. A strumous lad, who already has had excision of his left os calcis, and who suffers from phthisis, caries of the left ankle, and abscess of the popliteal space. On the 28th October the foot was removed, and the abscess which filled the popliteal space was scraped. On the following day it was dressed and the sutures tightened. There is no further record of dressing, but on the 28th November he left for home healed. On re-admission with disease of the right hip-joint, the popliteal space was found sound and well.

Similar results were gained in a comparatively short space of time in a series of ten smaller chronic abscesses of the neck and lower extremity. Two cases were not successful, but in one of these, in which the pus lay beneath the calf muscles and extended into the popliteal space, no splint was applied, and the wound became septic. The other case was already septic, and the imperfect clearing out of long sinuses about the pelvis and sacro-iliac synchondrosis led to a general infection which nearly cost the patient her life, from septic pneumonia, empyæma, and fever. She, however, ultimately made a most satisfactory recovery.

The temperature remained practically normal in all the cases save the two which were septic.

*Edw. M'K.*

## VII.—NOTE ON THE TERM "POSITION."

By D. BERRY HART, M.D., F.R.C.P.E., F.R.S.E., President Edinburgh Obstetrical Society; Physician, Royal Maternity and Simpson Memorial Hospital.

(Read before the Obstetrical Society of Edinburgh, 16th July 1890.)

THE very unsatisfactory nature of the terminology of the mechanism of labour is well known. It does not follow from this that we should construct new terms, as these would ultimately lead to the same confusion among our successors. All that, in my opinion, we should attempt in most cases is a careful and logical definition of terms, based on our present knowledge. To-night I wish to speak briefly on the definition of the term "position," as it is not only defined in our text-books in the most contradictory and imperfect manner, but even our best definition is contradictory when applied. Position is usually defined as "how the back points," a definition that fails when we speak of face cases, as the left mento-anterior position is here evidently how the front of the body points. The definition I would suggest for position is as follows:—"*Position is the relation to the upper strait of the pelvis of that part of the fœtus which should first rotate to the front in the movement of internal rotation.*" This involves almost no alteration in the nomenclature of the positions in head and transverse presentations, but clashes with our present nomenclature in breech presentations. We speak of these usually as sacro-anterior or sacro-posterior, as the case may be. Now this is not consistent either with the old terminology, or the change I propose. The sacrum is not the functional equivalent of the occiput, chin, or shoulder. It makes the naming of breech positions easy, but it sacrifices accuracy for that purpose. Breech presentations should be named from the hip, as follows,—Left coxa-cotyloid, right coxa-cotyloid, with the addition of sacro-anterior or sacro-posterior as required. The whole nomenclature of positions would thus be as follows:—

*Head Presentation.*—L.O.A., R.O.A., R.O.P., and L.O.P. (= left occipito-anterior position, etc.)

*Face Presentation.*—L.M.A., R.M.A., R.M.P., L.M.P. (= left mento-anterior position, etc.)

*Breech Presentation.*—Left coxa-pectineal or cotyloid (sacro-anterior, sacro-posterior); right coxa-pectineal or cotyloid (sacro-anterior, sacro-posterior).

*Transverse Presentation.*—Left acromio-pectineal or cotyloid (dorso-anterior, dorso-posterior); right acromio-pectineal or cotyloid (dorso-anterior, dorso-posterior).

In regard to breech and transverse positions we should note that the terms left and right are in relation to the mother, and that we take no cognizance of whether it is the right or left hip of the fœtus. The same holds good for the shoulder.



The advantages of this simple change are that we get position defined in terms of an important function, so far as its foetal element is concerned, and that we make its whole nomenclature consistent, and escape the contradictions involved by the usual anatomical definitions.

I have to add one word on the term "presentation." It should be made to equal "*and the long axis of foetus and uterus correspond or cut.*" Presentation cannot convey the idea of a complete definition except in transverse presentations, but requires the words head and breech added. Head presentation = head in lower pole of uterus and the long axis of foetus and uterus correspond; breech presentation = breech in lower pole of uterus and the long axis of foetus and uterus correspond; transverse presentation = the long axis of uterus and foetus cut one another.

SPIEGELBERG's *Text-book* (Hurry's translation).

SIMPSON, A. R.—*British Medical Journal*, 5th November 1887, p. 977.

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## VIII.—ON THE PATHOLOGY AND SUCCESSFUL TREATMENT OF CHRONIC TROPICAL DIARRHŒA (KNOWN AS SPRUE).

By CHARLES BEGG, M.B., C.M.

(Read before the Medico-Chirurgical Society of Edinburgh, 2nd April 1890.)

MR PRESIDENT AND GENTLEMEN,—I have first to thank you for allowing me to appear before you to-night, more especially as the disease of which I shall speak is one which can have little more than a scientific interest to you.

Still, there may be some present who, having been abroad, have seen cases, and others who have had to treat patients sent home in search of health, *and all* of you are in a position, some pre-eminently so, to discuss the all-important question of the probable true nature of the disease, and to criticise the statement I shall make, namely, that I believe the present view of its pathology to be wrong. That statement I confess at the outset to be the result of clinical experience, and not from laboratory demonstration. In a disease pronounced by the profession to be incurable, one may be forgiven if he is anxious to bring successful clinical work before the notice of his fellow-practitioners abroad, in order that they may test it without waiting to have his theories confirmed in the laboratory. For although the question in this country may be but a scientific curiosity, yet it is one of great practical importance abroad, the disease being one which ruins the life and prospects of hundreds although rarely in itself fatal. The present attitude of the profession towards it is to pronounce it incurable, unless the patient at once return home, and live for long periods on a pure milk diet. It is one of those border-land diseases where it had

been better for patients were it more fatal. The condition of things would then have been *observed*, and not, as at present, merely *inferred*.

Sprue has been defined to be a disease *of* and originating *in* the mucous membrane of the intestinal tract. The symptoms indicating an irritable, defenceless condition of the whole mucous membrane from mouth to anus, ending eventually in atrophy. Treatment is pronounced a failure.

My position shortly stated is, that I believe we are mistaking results for the initial cause, and that the true cause is an alteration in the products of digestion induced by the agency of an organism, and that all changes, if any, in the mucous membrane are secondary.

Dr Manson's admirable description of this disease is but the to-be-expected history of a patient suffering from an unchecked diarrhœa or other intestinal lesion interfering with the proper assimilation of the nourishment taken.

Dr Van de Burg, in speaking of the etiology of sprue, states that although he believes it to be climatic, yet it does not attack new arrivals, and is less frequent in dark races than among Europeans,—facts to my mind strongly pointing to a parasitic or microbic origin. Thus interpreted, it would mean that some time was necessary to elapse after arrival in the country to allow of the introduction and multiplication of the microbe, and the fact, if fact it be, that the dark races are freer from it, would be accounted for by the microbe or parasite finding a more favourable nidus in the intestinal canal of the European, or, which is more likely, depending on some question of diet. I can speak from the experience of a large Chinese hospital, and I find the disease, or a very good imitation of it, by no means uncommon.

Dr Thin has recently published a pamphlet on a series of six carefully recorded cases of sprue, and I shall quote *in extenso* his remarks on the most prominent symptom—namely, diarrhœa—before doing so. I would say that all observers remark on the clean appearance of the tongue, and its participation only in sympathy with the disturbance of the system and after the disease has existed for some time, or in a patient who has yielded very rapidly to the morbid influence. Dr Thin remarks that many of his patients appear on superficial examination to be perfectly well, others exhibit the appearance of persons fatally stricken by some wasting disease. Regarding the diarrhœa he says, "Although diarrhœa is sometimes a prominent feature, indeed, occasionally the chief feature of the disease, it is not invariable. The condition of the bowels may be more accurately described as irregular. When the disease has got hold of the patient he never passes a healthy motion. There are patients who, for many years, have never had a healthy stool, but yet have seldom suffered from what could be called diarrhœa. When diarrhœa is present it is often

serous, the evacuations consisting of a frothy, pale yellow, or clay-coloured, or brown, more or less pulpy mass. Sometimes the bowels are actually constipated—small, hard, dark coloured lumps being passed. Mucus is not a characteristic of the stools, although sometimes a considerable number of white mucous flocculi are present. One characteristic of the disease is in some cases the presence of very large motions in excessive proportion to the food taken, indicative of a suspension of the absorbing power on the part of the mucous membrane." A careful consideration of this description to my mind agrees perfectly with my theory as to the causation of the disease. The fault would seem to be *after digestion has taken place*, for all observers agree in allowing that the motions when examined with the microscope are free from undigested food, with perhaps the exception of a few muscular fibres and vegetable structures, not to be wondered at being found under the circumstances. My position is made even stronger by Dr Thin's statement, that "although in severe cases the microscope detects epithelial cells among the flocculi, still a characteristic feature of the disease is the absence in the motions of any signs of inflammation of the mucous membrane." And yet these observers are still content with the definition of the disease given above, although it seems to me they fail to point to a single fact in support of any diseased condition of the mucous membrane existing, and only prove that the mucous membrane has failed in its function of absorbing the food prepared for it by the process of digestion; and as these processes are conducted at different parts of the intestinal canal, I think they will find it difficult to explain why *one* part of the tube is able to do its duty and not another. As far as I can see, we must except the mucous membrane of the stomach from this mysterious morbid process. We have ocular demonstration that the motions do not contain undigested food. To allow of the digesting of the food taken we must suppose that the machinery by which that result is brought about is in a healthy condition; whereas, if the definition of "an irritable, defenceless condition from mouth to anus" were true, one would naturally expect the stomach to be the seat of the greatest irritability; it is certainly the hardest used part of the tube, and ought to be the first point to give in.

On the other hand, we have proof that although the motions do not contain undigested food they are not of a healthy or normal character, and I believe we find the secret in them. The state of the mucous membrane of the tongue, as seen in bad cases or in late stages of the disease, is certainly "irritable and defenceless," but it is allowed to be only of a secondary nature, and is but what is usually seen in similar conditions of malnutrition, the result of other diseases.

The only records of laboratory work I know of in connexion with finding out something about the organisms found in the

motions are also the work of Dr Thin. He cultivated organisms from Case I., and his results are most favourable to my theory, although he does not attach *the same* importance to them. Shortly stated they are as follows:—Out of a number of organisms contained in a minute drop of fluid motion thirteen distinct organisms were isolated; each was developed on gelatine, and was perfectly distinctive. Inoculations on fresh gelatine were made once a week. After a little more than two months none of these could be further cultivated. One bacillus behaved in a distinctive manner, and Dr Thin's attention was drawn to the fact that on several occasions the worse the stools were from the point of view of symptoms, the greater was the proportion in which the bacillus was present.

My theory of a special organism entering and multiplying in the intestinal canal, and by its action rendering the products of digestion inimical to absorption, will satisfactorily account for all the clinical phenomena. I did not see Dr Thin's book until after this conviction had been forced on me by the result of clinical experience. It is an additional fact in support of my theory that the present method of treatment is to place the patient, after sending him home, on a special diet for long periods. The diseased membrane is still called on to act, but care is taken that only a special substance, milk, is given it to act on. It may be argued that under milk's bland influence a healthy tone is recovered, but it is difficult to understand why, with a proper wholesome mixed diet, things should ever have gone wrong; and it is also difficult to explain why, if it be a fact that the structure be diseased, the function should be generally in excess instead of in abeyance, namely, appetite instead of anorexia. Whereas, if we argue that a mixed diet not only introduced the microbe, but contained substances favourable to the growth and well-being of the unknown organism, and in the prolonged use of such a substance as milk we supply the system with nourishment but not the bacillus, and that it is in time starved out of existence, we have at least a reasonable plan to work on. When I add to the above that I have found in practice a drug that very quickly cures such cases, I trust I shall have made out a strong enough case to lead to a reconsideration of the present accepted pathology of the disease.

I have confined my remarks to what constitutes the disease; all the other symptoms presented by patients are allowed by all to be secondary.

Sir Joseph Fayrer's book on *Tropical Dysentery and Chronic Diarrhœa* contains an exhaustive account of post-mortem appearances seen in these diseases in India, and he affirms the identity of sprue with the hill diarrhœa of that country. It requires careful reading to pick out the cases which may be of use to us in our present inquiry.

He states that the opportunities for studying the morbid



changes in ordinary examples of the disease are not frequent. On the changes seen in chronic diarrhoea he remarks as follows:—

“In some chronic diarrhoeas, especially those with the white flux (that is to say, cases of sprue), in spite of the long duration of the disease, little or no change of the mucous surface is to be found. There is great thinning of all the coats of the small intestines, so that they are quite translucent, and there is doubtless atrophy of the glandular tissues.”

He also records in various subjects, victims of chronic diarrhoea from all causes, extensive changes which I need not take up your time in detailing, but it is worthy of note that the condition of the other organs of the same subject were in a similar condition. And we must remember the kind of subjects examined. They were either victims of famine, or from the jails, or those who had died in hospitals in very advanced stages of their various diseases. I do not know of a record of a post-mortem on a patient in the condition which we recognise and are called on to treat as sprue—such, for example, as had existed in my last patient for 19 years.

*Treatment.*—In dealing with cases of chronic tropical diarrhoea I had very soon to confess to failure. It then struck me that there might be another explanation of the symptom constantly present—namely, the clean tongue—which I had learned to take as my guide when treating patients in China as indicating the presence of *ascaris lumbricoides*, no matter how various were the symptoms manifested. I therefore gave *santonine*. In not a single case where I could make a diagnosis of sprue did I ever see a parasite of any kind in the evacuations, but all the distressing symptoms of the disease yielded to a course of *santonine*. From the difficulties of laboratory work in China, I have been unable to do other than clinical work at this subject.

As a typical example of the class of cases under review, I may relate the following:—

A. B., aged about 25; several years in China. Has suffered for several years past with more or less constant diarrhoea. Has lost a great deal of flesh, and never knows what it is to feel comfortable in the abdominal region. The slightest irregularity of diet, etc., brought on a sharp exacerbation of the diarrhoea and flatulent pain. Evacuations frothy, pale coloured, and bad smelling; never formed; worse in the mornings. Mouth tender. On examination, nothing special to be made out in abdominal region except diminished liver dulness and an irregular percussion note over bowel. Tongue and mucous membrane of mouth generally clean, but raw and irritable looking. Had been under treatment in other parts in China, and also at home, where he had gone on account of his health. Has at last come to look on his case as incurable, and to be endured, if possible. Has an anxious, wasted look. He was put on treatment, and after the first series of six powders of *santonine* felt and considered himself to be perfectly well; was passing natural,

healthy, formed motions; had absolute freedom from pain and flatulence, and gaining weight rapidly. Over a year has now passed, and the patient has continued well.

It is interesting to note that I had had the patient under treatment some time before he went home, and had failed to do him any good. When I became convinced of the power of santonine in these cases I again took charge of him, with the result recorded above.

I shall let another patient describe his condition in his own words. He writes me :—

“My present trouble began about four years ago, I think, and for the last two years was accompanied by dyspepsia in a most aggravated form; pretty well everything was tried . . . but all to no purpose. The last two years I have been gradually losing weight, and got down from a normal weight, six years ago, of about 164 lb. to 130 lb. in thick clothes. My appetite was always good, but I had often faint feelings, headaches, and vomiting, and constant looseness, often absolute diarrhœa; at times, regular constipation for a day, always followed by greater looseness. I was often screwed up with wind collected inside, and digestion so impaired that my stools smelled so badly that I was positively offensive to myself. During all this I was in a continued state of depression and irritability. The rest you know. My weight on 18th June was 161 lb., and still ‘excelsior,’ I think.” June 18th was only four weeks after he had taken the course of santonine—an increase of 31 lb. A year afterwards I saw the patient in perfect health.

This patient had had for treatment six powders of santonine, and nothing else. I will not multiply cases, seeing that one case is, with small differences, exactly like another. I have treated, however, since my return home one patient whom I met in a hotel in London, whose case is a specially interesting one, for, among other things, it had been diagnosed as a true example of the disease in question by good men both in India and at home. It is also most interesting from the intelligent account given by the patient of its origin, and as being just the case where, had an irritable, defenceless condition of the mucous membrane from mouth to anus existed for nineteen years, one would not have been surprised had it ended in atrophy, and the patient been incurable.

Patient states :—“I first contracted what we call in India hill diarrhœa in 1871, marching from Nini Tal to Almora. It was a three days’ march, and, although in the Himalaya range, was very hot. I drank copiously from the small springs on the sides of the hill. On reaching Almora diarrhœa set in violently, and continued for a long time after I went to the plains. It was partially stopped by a medicine, but not, however, cured; and I was never, I may say, certain of myself, and, as far as I can recollect, never had a firm motion. In 1878 I had a very bad attack in Paris, and was again helped by treatment. My last bad attack was at Darjeeling,

in 1883, and up to date I have never been free from it. In 1883 I weighed 17 st. 12 lb., and went gradually down to under 12 st. I am now 12 st. 3 lb. with clothes and a light overcoat, which is scarcely enough for a man of 6 ft. 4 in."

This patient presented the appearance of chronic ill-health; pale, anæmic; pained, anxious face; and being of commanding height, his thinness was most pronounced. He complained of constant pain with diarrhœa, or rather a constant uneasy feeling in the bowel and irregular motions, ever and again lighting up into a sharp attack of diarrhœa, leaving him prostrate.

In October 1889 I put him through a course of six powders of santonine, but he could only obtain the *white*, and he wrote me on the 19th of that month as follows:—"I certainly think I have benefited by the course, but possibly my complaint is of such long standing, that only six powders may not be sufficient." He was advised to obtain the yellow santonine, and repeat the course; and on the 16th March of this year he writes me:—"Dear Dr Begg, I am afraid from my long silence you will think I have forgotten you, but that is not the case, as I waited to give the treatment you recommended a good long test before communicating the result. I went through a second course of the santonine (the yellow), and I am delighted to be able to tell you that I have been, I may say, quite free from that complaint ever since, and have felt as I have not done for years." Confirming that letter he writes on the 23rd—"I only wish I could help you to make it well known, as after years of suffering and consulting some of the best physicians in London, who gave me no permanent relief, your treatment has, as far as I can now speak, completely cured me. In addition to the relief and freedom from pain, I am quite a different man, and able to go through a hard day's work without feeling fatigue, which I was not able or fit to do before. I for one can say that the old remedies of chalk mixture, acids, milk diet, etc., are of no use for sprue, or what I call hill diarrhœa—for I have tried them all, and many other medicines that have from time to time been given me."

The description of the treatment of one case will do for all. I try, if possible, to place the patient at perfect rest in bed or on couch, and according to the percussion note on abdomen commence the treatment with or without a dose of castor-oil, guarded with tincture of opium. I also frequently order large warm water enemata at bedtime. A hot fomentation is often necessary in cases of painful flatulent distension, and generally takes the place of the usual drugs given for the relief of that condition. The diet is principally milk, pure or mixed with lime-water, eggs, and brandy, beef-tea thickened with corn-flour, weak tea with lots of milk, dry toast or soda biscuit. It is important to take the nourishment frequently in small quantities.

The dose of santonine is the usual one of 5 grains for an adult, and is given in a teaspoonful of olive-oil, well mixed, and given the

first thing in the morning; or if the patient suffers considerably from the effects of the drug, I prefer to give it at bedtime. I consider it most important to give it in the oil. I give one dose each day for six days. I use the yellow crystals, having had unsatisfactory result from the white. I am aware that the colour is said to depend only on the action of sunlight, but it is a fact that sunlight will no longer act on the drug as at present supplied to us, and my last case was a marked example of the failure of the white and success of the yellow. I record my prejudice in favour of the yellow, but must leave to others the solution of the question. In the therapeutics of *santonine* little mention is made of any other property than its parasiticide action on entozoa. I have found it to exert a powerful astringent power, and prove itself an excellent constipating agent. But I am certain that we cannot attribute the good resulting to this property of the drug, nor can the diet take the credit, for I allow great latitude as soon as the six days' course is over, bringing my patients rapidly through the stages of digestible food up to the ordinary mixed diet.

Since first becoming convinced that there was a possibility of attempting the cure of these patients, I have communicated with not a few men in practice with opportunities of seeing this class of patient; and I understand good results have also been got with carbolic acid and perchloride of mercury. So far I have not had necessity to desert *santonine*.

In conclusion, I would shortly state my position as follows:—I do not believe that the disease *sprue*, as defined at the beginning of this paper, exists. I believe we are dealing with an alteration in the products of digestion induced by the agency of an organism, and that by its action the contents of the bowel are rendered unfit for absorption, and all clinical phenomena are but the result. The organism, no doubt, may produce irritation of the mucous membrane by its presence, and by the changed character of the motions. The diarrhœa is simply Nature getting rid of what she cannot utilize. The state of the mouth and general condition of the patient are simply the to-be-expected result of such interference with so important a function, and in detail are but what is seen every day in patients suffering from other diseases including or causing similar functional derangements. I believe *santonine* inimical to the life of the organism, although other drugs may be found to have the same power.

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### IX.—NOTE ON CHOLERA.

By J. B. N. HENNESSEY, C.I.E., F.R.S., etc., Inverniel, Dehra Dun, N.-W. Provinces, India.

THE following remarks present certain suggestions connected with the investigation and treatment of cholera, subjects which



have never failed to excite my interest for more than a quarter of a century.

There is probably no disease which has received more attention (at least in India) than cholera from the united chemical, medical, and generally scientific brotherhood, or any that excites more common anxiety in the neighbourhood of its attacks. Not that cholera claims more victims than other diseases; on the contrary, in India, after a period of drought and scarcity, if a few thousand fall to cholera, many tens of thousands die from fever. None the less, while it lasts, cholera is a very king of terrors, because its action is sudden, rapid, and a mystery. Its literature is considerable, its statistics vast, its investigations, experiments, and theories (also, alas! its fanciful antidotes) numerous; but though fruitless, now as in past ages, as respects a cure, these endeavours are in reality monuments to the patience, benevolence, and devotion of the medical brotherhood, who can claim representatives in this country ranking with the eminent of their profession.

But though short of a cure, considerable progress has been made in various directions. This, however, need not be dwelt on here, a few particulars excepted. For instance, in 1844, I saw a cholera patient under the care of three kind and able doctors, who, notwithstanding that he suffered from the usual thirst, would let him have *no* water. This would now be considered as simply barbarous and wanting in common sense; in fact, some twenty years later, I knew of another patient (at Peshawar) who drank thirty-three bottles of soda-water, and who recovered. So much for change in treatment. Again, as the foremost sequela of cholera, we know that the serum parts from the blood; and further, when reaction sets in, the serum gradually returns to its normal quantity: these two points have always struck me with great force.

In later years, and amongst (fortunately) only a small section of Indian doctors, it was denied that cholera was "infectious." Whether the "infection" can be controlled is another matter; but plainly, the phrase needs elaborate definition prior to any discussion, which, however, is out of my province. This much, however, I once had an opportunity to show from facts.<sup>1</sup> Suppose some swarms of pilgrims collected together, as happens in India, that cholera appears amongst them, and they are ordered to disperse homewards, and that they do this in half a dozen radiating routes from the shrine as a centre, dying mostly at halting-places on their journey,—now, it was found that the residents of these places were not attacked by cholera until three or four days *after* the pilgrims had passed through. Drop a stone in a pond, and the wave produced radiates from this point until it is expended; so did the choleraic wave ripple along the radiating routes of the pilgrims.

<sup>1</sup> *Discussion of Cholera Returns from Places around Hardwar*, prepared immediately after the Kumb-ka-mela (great fair held every twelfth year) of 1878, under directions from W. Chichele Plowden, Gov. Commissioner of the Meerut Division (now Sir William Chichele Plowden, M.P.)

Further, in keeping with the non-infection theory, even mention of a cholera poison, virus, or any potential whatever to cause the disease has been shunned, because (so ran the argument) it could not be exhibited as an "entity!" Then, as germs came to be detected, named, and classified, naturally renewed attempts were made to find a micro-organism always accompanying cholera. Koch's researches are too well known to need more than allusion to his comma (or, as he calls it, *cholera*) bacillus; nor need we go beyond them to learn that Klein drank off some colonies of the bacilli, without discomfort to himself, if any to the bacilli; that Bochefontaine swallowed choleraic dejecta in pills, and so on, to results from inoculation.

In a word, the object in view has been to find cause for the *presence* of cholera; it is hereafter suggested to find cause for its *absence* under certain promising conditions. It is well known, at least in India, that cholera occurs with far less frequency and virulence in some localities than in others—*i.e.*, that some places enjoy sensible immunity from the scourge, and probably several spots may be found where cholera is unknown. One such place is the sanatorium of Mussoorie, on the Himalaya Mountains. This is not the first occasion on which I have dwelt on its happy immunity;<sup>1</sup> and further observations since I last noticed it (1879) have fully confirmed the conclusion.

The sanatorium of Mussoorie stands on the southern and outer range of the Himalaya Mountains, in the North-West Provinces of India. It is a place of resort for Europeans who desire to escape from the heat of the plains during the summer months, when this place is cool and refreshing; while in winter, frost and snow are plentiful. The height of the ridge is some 6700 feet above sea level, and its population in the season rises to about nine thousand souls. All articles for consumption or use are necessarily imported from the plains below, and to stop the supply would be to starve Mussoorie at once; so traffic proceeds without the smallest interruption, whether cholera or other epidemic rages below or not.

Again, the Dehra Dun (or valley), some twenty miles wide, stretches from the foot of the Mussoorie ridge to the low range of hills called the Siwaliks, and is bounded east and west respectively by the Ganges and Jumna rivers. South of the Siwaliks stretches away the plain country. Cholera recurs at uncertain annual intervals, and with more or less virulence, all over the plains, and visits with no less violence the whole of the Dehra Dun; so that visitors imported into Mussoorie from various localities may arrive at the sanatorium in early stages of choleraic infection or even development. Now, in the absence of suitable observation such cases may be easily mistaken as of *local* origin—*i.e.*, as if the disease was contracted *at* Mussoorie. We may, however, readily divide

<sup>1</sup> *Proceedings of the Royal Medical and Chirurgical Society of London*, 10th February 1874.

the cases at Mussoorie into two groups—those of recent arrivals, say within a week before seizure, and those of residents who have been at the place for a longer period, or who have not left it; the former are here intended by *imported* cases, the latter by *local* ones.

I have resided at Mussoorie for some thirty-five years; and taking great interest in cholera, it gradually dawned on me that the cases which occurred at Mussoorie amongst both Europeans and Natives were not amongst the residents of the place, but were restricted to visitors who had recently come up from the plains; in a word, that these were *imported*, not *local* cases; and now, for some quarter of a century or more, I have never ceased to make careful inquiries, when occasion arose, from the local medical officers and the people around, aided by my own observations. The result is that I can confidently affirm, as I have done for years past to people in these parts, that in all my long experience cholera has never visited Mussoorie as a local infection. Visitors, both Europeans and natives, undoubtedly are seized with and die of cholera at Mussoorie, but they are all recent arrivals of not more than (say) seven days' standing. The disease has never spread to other visitors of longer residence, or to the permanent residents, but the seizures have been entirely restricted to the recent arrivals, who, in fact, were already poisoned with choleraic virus *before* they reached Mussoorie. Otherwise expressed, and this is the point I wish to state forcibly, *cholera can neither originate nor spread on the Mussoorie ridge*. This is not the case at other sanatoria, which are so far similar to Mussoorie that they also stand on the Himalayas, and the immunity is the more striking, because, as said, all the Mussoorie supplies are obtained from more or less infected tracts, which, in the case of the Dehra Dun, are within a couple of hours' journey. The question naturally arises, What is the reason for this singular immunity, *i.e.*, for the *absence* of cholera at Mussoorie?

That other places in India and elsewhere enjoy similar immunity appears well deserving of inquiry. But restricting my remarks to the subject of my own personal observation, I wish particularly to point out that the Mussoorie ridge offers peculiar advantages which invite investigation as to why cholera should be absent on it, and I need hardly add that were this cause discovered, a great stride would probably be effected towards, at least, control over cholera.

Looking southwards from the Mussoorie ridge, there appears the rapid mountain fall to Dehra Dun; nor need one travel further for purposes of investigation, since this valley has frequently been visited by cholera. The last visitation occurred only two years back (1887), when cholera persistently prevailed in the valley for several months. The Goorkha battalions suffered (like the villagers), and, as usual, were located in what are known as cholera camps. Standing on the Mussoorie ridge, the little white tents of

the nearest camp below were distinctly visible to the unaided eye, and with a good telescope you could see people moving about the tents.

These, then, are the promising conditions under which investigation may be made. Suppose a competent observer, A, placed on the Mussoorie ridge, where cholera is *absent*, and another, B, in a *cholera* camp below. The direct distance between them is only some four miles; they can almost see each other; certainly they can converse freely by signals, and can visit one another in the course of a couple of hours: yet A is safe from cholera, but B may be infected any moment. These circumstances are probably unique for rapid and complete comparisons between A and B. There is something around A which causes the *absence* of cholera, and this cause is not present with B; what is it? The conditions seem singularly promising, and the inquiry appears as if drawn within narrow limits. Will close contrast and keen observation not detect the cause? And as surely as effects spring from causes, a cause must be present at Mussoorie for the *absence* of cholera there.

My observations go no further, as yet, than to affirm that the immunity mentioned exists, and to suggest that the investigation indicated should be undertaken. No doubt the latter requires that cholera must at the time be present in the Dehra Dun. Such occasions are not rare, and one may (unfortunately) be predicted about the end of March 1891, when the Kumb-ka-mela will again be held at Hardwar. The latter is the well-known place of Hindoo worship, and here, every twelfth year, an enormous crowd of pilgrims and traders assemble. At the last fair of the kind it was estimated that five to nine hundred thousand people were present. The space for the gathering is insufficient, and, notwithstanding the most energetic efforts, insanitation and cholera commonly follow. Hardwar is only some thirty miles from Dehra Dun, and pilgrims from the latter place return infected, and infect the valley.

Provision for the proposed investigation is, of course, necessary, and this in *anticipation*; but it need be neither extensive nor expensive. If I may venture to suggest, I think one of the two observers should be a *medical* expert from home, possessing sufficient skill as a chemist, microscopist, and spectroscopist; the other observer could easily be found in the Indian Medical Service, so as to supply all needful local knowledge. Each should have an intelligent laboratory assistant, with sufficient instrumental and other means. For the rest, those competent to judge and able to promote the object in view can decide for themselves what support the foregoing suggestions deserve.

I next venture to say a few words on the course followed in the treatment of cholera, noting that discussion of drugs is not intended here.



This much at least, it appears, may be asserted of cholera:—That (1), it has for its primary manifestation the signs of an intestinal catarrh; (2), that during the first (or algid) stage, the water (serum) having parted from the blood, the latter becomes thick, so that it cannot circulate freely, or does not flow at all; and (3), when reaction is established the serum gradually returns to its normal quantity.<sup>1</sup> It is not necessary here to travel beyond these well-known facts. Now, at the outset it is to be noted that though the intestinal catarrh is the first *visible* sign of seizure, yet in reality it must have been *preceded* by the process of decomposition which *separated* the serum; and it appears a safe conclusion to accept, that this serum, being discharged into the intestines, is in turn discharged, with other matter, by the intestinal catarrh. Hence, proceeding backwards from the catarrh to the decomposition, we recognise that there must have been a cause for the latter process; this cause may be comprehensibly understood to include the cholera virus, germ, potential, or by whatever phrase it may be designated. If this cause itself be only a *symptom* (just as the catarrh is of the decomposition), and is really due to a preceding potential, then all I can say is that the latter eludes my powers of conception, and I content myself by assuming that the cause for decomposing the blood is *the* cholera potential itself. This potential or germ may be conceived to circulate in the blood when first introduced there; that no germs have been found in the blood (later on?) may be accounted for if the germ itself is *decomposed and expended*, AS SUCH, in course of its decomposing action on the blood: possibly the germ may be detected in the blood, if the latter is drawn before the algid stage has set in, and before both germ and blood are sensibly decomposed.

Returning to the discharging of the serum from the blood, this discharge must happen *into* the *stomach* (as well as elsewhere), so that for the time its capacity for absorption is most probably suspended; hence any drug introduced in it is most likely useless, if not injurious. This view is corroborated by the fact, that though thousands of so-called specifics have been placed in countless cholera afflicted stomachs, a cure still remains unknown. In fact, whether the drug be the right one or not, it cannot be absorbed by a stomach (sensibly speaking) which at the time is itself a receptacle for discharges. If this be correct, then the stomach is the wrong place for *any* remedy.

The next idea that presents itself is the use of hypodermic injections. This method, of course, is well known; but it is unavoidably tried too late, because at present cholera cannot be recognised as such *before* the intestinal catarrh has set in. This symptom is the visible sign that languid (or nominal) circulation has *already* been established, when injection at one or even a few points of the body perhaps cannot act with sufficient rapidity and effect.

<sup>1</sup> From whence is this serum drawn? the atmosphere?

There remains *treatment by inhalation, which is here suggested*; and whatever other functions may be in suspense, the lungs act to the last. This method apparently avails itself of the most powerful agency, left operative in a failing system, for restoring serum<sup>1</sup> to the thickened blood; and the inhalation required must be one which enables serum and blood to *resist* separation.

And speaking generally of cholera treatment: until we can recognise infection long before the present state of recognition, it is as hopeless to try and *cure* a patient with cholera as one with a bullet through his heart. Fortunately it does not happen in every seizure; but when all the serum in a human being is discharged, virtually he is dead. We must therefore aim at detection of infection in its earliest stages, and employ means of protection and prevention rather than of cure. From discussion of some hundreds of cases, I arrived at the conclusion that cholera generally takes some four days to develop from infection to active disease; and from operations at Mussoorie the period appears to be within seven days, after which visitors arriving from infected tracts would probably not be seized at the sanatorium. Between infection and development, examination of a drop of the person's blood may be useful to test for ready separation of the serum; similarly, exhalations into a suitable glass tube might be tested—(1) with a drop of *healthy* blood, or (2) for micro-organisms. And during the active progress of cholera, examination of the patient's blood from time to time appears a delicate and direct test calculated to show fluctuations of life not detectable by the pulse (if any).

I have ventured to express the foregoing ideas because they appear to me reasonable, and, so far as I am aware, are original; they certainly are the outcome of considerable interest in the subject combined with an earnest desire to help in overcoming the long-established, unsparing, and mysterious enemy of mankind—cholera. But I am aware that they are, in any case, *practically* of little value unless they commend themselves for adoption by gentlemen who are competent to give them *practical* effect—i.e., trial.

I venture also to suggest that it is time our medical rulers put on record, for the guidance of numerous well-intentioned but ignorant persons, what they should *not* do with cholera patients. In India especially there are many gentlemen in isolated positions, with numerous workmen under them, and without medical aid. These and others are quite positive, each one, that he possesses a *specific* for cholera. Again, there is (or was) the "Government pill," compounded of opium, red pepper, and assafoetida—a kind of thing akin to the fiery bazaar liquor, which in olden times "Tommy Atkins" very appropriately designated "fixed bayonets." These pills used to be manufactured and distributed broadcast to the simple, ignorant peasant, who insisted on being armed with medicine. That they irritated his internals appears highly probable,

<sup>1</sup> From the atmosphere.

though no doubt they helped to inspire him with the kind of confidence ascribed to the old lady who frequently repeated the soothing word "Mesopotamia." Some believe in brandy and laudanum, others in a big dose of castor oil, and not a few prohibit the drinking of water in spite of the patient's thirst. In a word, thousands of stomachs all over India are annually subjected to injuries originating undoubtedly in philanthropic motives. Now, if those stomachs only belonged to *guinea pigs in England*, an extension of the Anti-Vivisection Act would of course protect them! Why, then, should it be permissible to experiment on an Indian neighbour's stomach because it happens to be afflicted with cholera?

# X.—MOTOR PARALYSIS RESULTING FROM THE HYPODERMIC INJECTION OF ETHER. ILLUSTRATED BY TWO CASES.

By DAVID WALLACE, F.R.C.S. Ed.

(Read before the Medico-Chirurgical Society of Edinburgh, 2nd April 1890.)

PHYSICIANS and surgeons have very frequently to use hypodermic injections, and fairly definite rules are laid down both as to the method to be adopted and the preparations to be used in this mode of exhibiting drugs. In cases of syncope and collapse, rapidly diffusible stimulants have to be administered, and their administration is preferably carried out by hypodermic injection, that being the most certain and most rapid method of attaining the desired result. My object in this short paper is to draw attention to an accident which may result from the injection of ether, an accident which I can illustrate by two cases.

The diffusible stimulants used for hypodermic injection are chiefly ethers, alcohol, and ammonia. Of the former various preparations are recommended, but those chiefly used are ether sulphuricus, spiritus etheris, and ether purus. Alcohol may be used either in the form of brandy or whisky. These preparations are made up of the following percentages:—*Ether sulphuricus* contains 92% of pure ether and 8% of alcohol and water; *spiritus etheris* contains one part of ether to two parts of alcohol; while *ether purus* is pure ether, 100%. Whisky and brandy have each 50% of alcohol. Alcohol has a special affinity for nerve tissue, which it rapidly coagulates and hardens. Ether also has a special affinity for and causes coagulation of nerve tissue. Ether is more readily diffusible than alcohol, and is, therefore, used in preference to it where we wish a very rapid effect, as in cases of collapse and syncope.

For the hypodermic injection of ether there are two generally recognised methods,—1st, it may be injected subcutaneously into the cellular tissue immediately under the skin; or, 2nd, it may be

injected deeply into the belly of a muscle. When we use the former plan there may be a little emphysema produced by the rapid volatilization of the ether, and the small operation is associated with a little pain. If, on the other hand, we inject the ether deeply into a muscle, there is no pain, but there is a risk of a deep-seated abscess forming. Ether is, however, a powerful antiseptic, and therefore, even if the needle used for the injection be not absolutely aseptic, the risk of this latter accident is small.

CASE I.—During the evening of January 15th of this year I was watching a patient who suffered from an acute inflammatory swelling in the neck, which had been freely incised an hour or two previously. The patient suddenly became collapsed to such a degree that the radial pulse was imperceptible. As rapidly as possible I gave an injection of ether hypodermically, pushing the needle into the most accessible part of the body, viz., the extensor aspect of the left forearm at the junction of the lower and middle thirds. I injected about 20 minims of ether sulphuricus. The patient recovered from the collapse, but next morning I was struck by the fact that he had paralysis of the extensor group of muscles of the forearm. On analysis of this paralysis, I found the whole of the muscles supplied by the posterior interosseous nerve completely paralyzed. There was, however, no “drop wrist,” the extensor carpi radialis longior serving to prevent this. It was obvious that the paralysis was due not to compression of the musculo-spiral nerve during sleep, but to some cause affecting its chief muscular branch, the posterior interosseous nerve.

CASE II.—On 28th January, ten days after the occurrence of Case I., Professor Chiene had occasion to perform excision of the testicle. Towards the end of the operation it was observed that the patient was very pale and the pulse small and weak. It was deemed advisable to inject ether, and this was done by the doctor in much the same way as in Case I. At the most accessible part, the back of the forearm, 20 minims of ether sulphuricus were injected deeply, the needle being pushed as rapidly as possible into the arm. On the following day the patient was discovered to have paralysis of the muscles supplied by the posterior interosseous nerve, although not to such a marked extent as in the first patient, as he still retained some power of extending the ring and middle fingers.

The first case having been more directly under my own observation than the second, I may describe to the Society its subsequent history, dismissing the latter case with the remark that at the present time (nine weeks after the occurrence of the paralysis) the patient has not fully regained the use of his hand, although voluntary power of the affected muscles is gradually returning.

The subsequent history of Case I. has been as follows:—During the first week the patient was so ill that nothing could be done to treat the paralytic condition other than placing the hand in the



most comfortable position for the patient. At the end of the week massage was begun and regularly used twice daily, while the patient was at the same time directed to constantly endeavour to use the muscles, the power of which had been lost. This treatment was continued for one week, but gave rise to no improvement. Blisters over the course of the posterior interosseous nerve were then applied, but their application produced no visible change in the condition, and it was therefore decided to use electricity. Faradism produced no contraction of the muscles, even when the current was sufficient to cause severe pain. Galvanism was therefore had recourse to. On 14th February, one month after the paralysis occurred, Dr Wyllie—who kindly undertook the electrical treatment—examined the arm carefully. He found the only muscles of the outer border and back of the forearm not paralyzed were the supinator longus, the extensor carpi radialis longior, and the anconeus, *i.e.*, all the muscles supplied by the posterior interosseous nerve were paralyzed. They were at the same time markedly atrophied. The other muscles of the forearm were in their natural condition. The common sensibility was unaltered. The current produced by 45 Leclanche cells—a current sufficient to pass through the extensor muscles to the flexors—was required to get contraction of the affected muscles on the first day of the application, but two days later the current from 27 cells produced an equal amount of contraction. After the daily application of galvanism for one week, the muscle contractions were sufficient to partially extend the thumb and fingers.

On 8th March—that is, after three weeks of galvanism—the wasted muscles were found to have greatly increased in bulk and firmness, and their passive resistance to the flexors was such that the fist could be firmly closed. There was, however, no power of voluntary movement.

On March 15th, eight weeks from date of paralysis and after four weeks of galvanism, the middle and ring fingers could be voluntarily extended, and a week later the little finger could be extended, while slight abduction of the thumb was got by the action of the extensor ossis metacarpi pollicis and extensor secundi internodii pollicis. The primi internodii pollicis was still devoid of any voluntary movement. At this date the interrupted current was again tried, but stimulation of the musculo-spiral or posterior interosseous nerves had no visible effect on the extensors.

*Present Condition.*—The patient has rather more power of abducting the thumb, and can slightly dorsiflex the fingers. The hand generally is much more useful. The muscles which have their nerve supply from the highest part of the posterior interosseous nerve are those which can be chiefly used by the patient, *i.e.*, those muscles supplied by twigs furthest away from the point of the injection of the ether.

The gradually increasing strength of the muscles may perhaps be

better gauged by the result of dynamometric examinations made at stated intervals:—

On 22nd February, with left hand 70 lbs., right 275 lbs.

„ 18th March „ „ 80 „ „ „

„ 1st April „ „ 170 „ „ „

For an explanation of the paralysis two thoughts naturally suggest themselves—first, that the posterior interosseous nerve trunk was pierced by the needle, and the ether injected directly into the trunk of the nerve; second, that the ether used was a bad preparation, and had a neurolytic action, or that it had a local toxic action which affected the nerve just as in lead or alcoholic poisoning. The latter explanation can be dismissed, as on testing the ether it was found to be a good preparation. The former explanation has to be considered from an anatomical point of view. Normally the posterior interosseous nerve trunk would be situated about three inches above the point where the needle was introduced, and if we subtract an inch from that distance for the length of the needle, the nerve trunk would be still two inches distant. The likelihood of an abnormal distribution of the nerve is minimized by the accident occurring in two cases, but further any abnormality of the nerve is very rare. Quain does not mention any example of its occurrence.

The explanation would rather seem to be that the ether after injection would diffuse most rapidly through the intermuscular spaces, and as it is in these that the nerve branches chiefly lie, the ether coming into contact with these branches would cause coagulation and destruction of the constituents of the nerves, and in that way destroy their conducting power. Then the immediate local effect would probably be followed by some degeneration of the nerve going to a higher level, while neuritis would be set up as indicated by the pain felt by the patient during the first three or four weeks of the paralysis. This explanation is borne out by an experiment performed by Lauder Brunton and his assistants, and quoted by the former in the Croonian Lectures on the Relationship between Chemical Structure and Physiological Action.<sup>1</sup> The method employed in this experiment was to take “the sciatic nerve of a frog with the gastrocnemius muscle attached, so that its contraction and non-contraction when the nerve was stimulated might serve as an index for the presence or absence of functional activity in the nerve. Alcohol and ether, when applied so as to act on the nerve trunk, destroyed conductivity before irritability, so that stimulation applied to the nerve further away from the muscle than the part acted on by the ether gave no effect, while when applied nearer the muscle than the part affected by the ether there was contraction of the muscle.”

Since these two cases have come under my notice I have tried, in every way open to me, to find references to similar cases, but

<sup>1</sup> Lauder Brunton, *British Medical Journal*, 6th July 1889.

have only succeeded in finding one, which was kindly supplied to me by Dr Lauder Brunton. There is no mention of such an accident in any of the medical works to which I have referred, ~~including~~ some, I may mention, as representing medicine, therapeutics, and nerve injuries and diseases—Ziemssen's *Cyclopædia of Medicine*, Reynolds' *System of Medicine*, Quain's *Dictionary*, Hilton Fagge, etc. In therapeutics, Ziemssen's *General Therapeutics*, Lauder Brunton, Wood, Bartholow, Ringer, Phillips, etc. In nerve diseases and injuries, Duchenne, Ross, Gowers, Mitchell, etc. In Neale's *Digest* there is no reference to any journal which contains a note of any such accident.

The reference given me by Dr Lauder Brunton, to which I have alluded, is contained in the *Revue de Médecine*, Bordeaux.<sup>1</sup> Unfortunately I have been unable to get the complete paper, but the following abstract is contained in the *Revue de Médecine*, Paris, under the heading, "Paralysis following the Injection of Ether." In this paper four cases are quoted in which paralysis occurred in the muscles near the point where injections had been practised. "Sans décider du mode d'action de l'éther sur la fibre musculaire ou sur les terminaisons nerveuses, et malgré une étude incomplète de la paralysie, M. Arnozan fait ressortir les points suivants.

"1. L'injection d'éther dans les muscles produit la paralysie de ces muscles.

"2. Ces paralysies offrent des analogies très grandes avec les paralysies périphériques du facial par exemple suppression ou diminution de l'excitabilité faradique, augmentation de l'excitabilité galvanique, retour du mouvement volontaire avant celui de l'excitabilité faradique.

"3. Elles guérissent spontanément, mais avec une assez grande lenteur. Leur guérison par l'application de courants galvaniques est beaucoup plus rapide."

I have thought these two cases of paralysis succeeding the injection of ether well worthy of notice, because in none of the various text-books are we warned of the possibility of such an accident as I have described occurring; and further, the accident, when it does happen, is a most awkward one, causing very great inconvenience, it may be, to the patient, and necessitating prolonged and careful treatment on the part of the medical attendant. The two cases I have quoted seem to bear out the conclusions arrived at by M. Arnozan:—

*First*, That paralysis may be caused by the injection of ether deeply into muscles.

*Second*, That the prognosis is favourable, and although recovery may be long delayed, yet it does take place.

*Third*, That galvanism hastens the cure in a very marked fashion.

<sup>1</sup> Arnozan, "Paralysies consécutives à des injections d'éther," *Journal de Médecine de Bordeaux*, 1881-82, pp. 526-529.

Further, I think that the possibility of such an accident occurring indicates that when we use hypodermic injections of ether the ether should be introduced subcutaneously; but if put deeply into a muscle, we should choose a fleshy muscle, such as the deltoid or gluteus maximus, where there is less risk of the ether in a concentrated form reaching the nerve branches than when it is injected into such a part as the extensor aspect of the forearm. In future I shall, even in cases of threatened syncope, take the little while necessary to pinch up the skin and inject subcutaneously.

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## Part Second.

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### REVIEWS.

*A Manual of Anatomy for Senior Students.* By EDMUND OWEN, M.B., F.R.C.S., Surgeon to St Mary's Hospital, London, and co-Lecturer on Surgery (late Lecturer on Anatomy) in its Medical School. London: Longmans, Green, & Co.: 1890.

THIS work is a somewhat ambitious one, as is evident from the following extracts from the preface:—

"When about to vacate the Chair of Anatomy, which for twelve years I had occupied in the Medical School of St Mary's Hospital, I desired to leave some permanent record of my work which might prove of interest and assistance to senior students.

"Having always found it impracticable to draw a hard-and-fast line between facts which bear upon the science of Medicine and those which chiefly concern the practical surgeon, I, a surgeon, have presumed in this manual boldly to trespass upon the domains of the physician as well as of the specialist.

"Most of the ground has, I am aware, been already covered, especially as regards so-called surgical anatomy. But the entire range of anatomy has not hitherto, I think, been treated from the point of view of the senior student, who, having quitted the dissecting-room, is in need of a volume which shall supply him with such anatomical information, free of wearying detail, as is essential for his successful and intelligent work in the medical and surgical wards, and in the special departments of his hospital."

A complete text-book of applied anatomy has long been needed, and if well done such a work would be welcomed, not only by senior students, but also by many practitioners. We have, therefore, gone carefully through this volume, in order to ascertain whether or not it accomplishes the objects indicated in the preface.

It contains a fairly good index, but there is no table of contents or list of illustrations. The work is divided into five parts, dealing respectively with the head and neck, the thorax, the upper ex-



tremity, the abdomen, and the lower extremity. No definite plan seems to have been followed in describing the structures belonging to these different regions, and in several cases the arrangement indicates great carelessness. Thus, under the heading of "The Elevators of the Hyoid Bone" we find a description of the occipitofrontalis and of the muscles of mastication.

In giving the relations of structures the author does not by any means keep "free of wearying detail," but shows a decided tendency to encumber his pages with long lists of names. Thus, in describing the sterno-cleido mastoid, he writes,—“Beneath it are another layer of the deep fascia, the sterno-hyoid, sterno-thyroid, and omo-hyoid muscles; the posterior belly of the digastric; scaleni, levator anguli scapulæ, and splenius; the common and perhaps the beginning of external and internal carotids; the internal and anterior jugular veins; vagus, descendens and communicantes noni; spinal accessory; cervical nerves, occipital artery, lymphatic glands, and the deep part of the parotid. Beneath the muscle also, in contact with the scalenus anticus, are the subclavian vessels and the phrenic nerve.” Even as a mere list it is devoid of any order, is incomplete, and is not altogether accurate. There need be no doubt as to the external and internal carotids being covered at their origin by the sterno-mastoid, and only a very small portion of the deep part of the parotid gland is beneath the sterno-mastoid. Even, however, were such lists well arranged, complete, and accurate, one might well doubt their utility in a work of this kind, for the reader is supposed to have quitted the dissecting-room, and to be “in need of a volume which shall supply him with such anatomical information, *free of wearying detail*, as is essential for his successful and intelligent work in the medical and surgical wards, and in the special departments of his hospital.” In such lists there is no light and shade, no attempt to bring into relief the main facts.

About twelve pages are devoted to the organ of hearing, partly under the section “Temporal Bone,” and partly under that of “The Ear.” We must confess, however, to have been greatly disappointed with this part of the work. There is no reference to the existence of a mastoid air cell, generally called the mastoid antrum, in the infant; and the anatomical relations of this cavity in the adult, and the way in which it may be reached by the surgeon, are only vaguely indicated. The external auditory meatus is said to be extremely short in the young child, whereas this statement is only applicable to its bony portion. No description is given of the appearance of the membrana tympani in the living body—nothing about its colour, curvature, and bright spot, or the parts of the malleus that can be seen in it. The semicircular canals are said to “occupy suggestive geometrical positions—the superior is in a vertical transverse plane; the posterior in a vertical antero-posterior plane,” the author being apparently ignorant of the investigations of Professor Crum Brown on these canals.

The chapter on the nose is even more defective than that on the ear. There is no reference to the parts seen by either anterior or posterior rhinoscopy. The mucous membrane over the lowest spongy bone is said to be sometimes a good deal hypertrophied, so that it may be possibly mistaken for a polypus; but there must surely be some force in Sir Morell Mackenzie's plea for specialism when a London surgeon ignores the existence of erectile tissue in this situation.

There is a list of the nerves supplying the nasal mucous membrane, but no reference to the reflex phenomena which the researches of John Mackenzie, Hack, Woakes, and many others have shown to be associated with this membrane.

About twelve years ago Dr Paul Albrecht showed that the fissure in cases of cleft palate was not situated, as formerly supposed, between the superior maxilla and inter-maxillary bone, but went through the inter-maxillary bone, the latter really consisting of two portions—an inner and an outer. Albrecht's opinion has been confirmed by numerous other observers, but Mr Owen gives the old view, and makes no reference to Albrecht's conclusions.

The position of the motor fibres in the internal capsule is the anterior two-thirds of the posterior limb, but according to the work under review, "damage to the anterior part of the internal capsule causes motor paralysis."

The course of the nerve-fibres supplying the muscles of the soft palate is a subject on which some difference of opinion exists; but of late years evidence has been accumulating in favour of the view that these fibres do not come from the facial, but from the accessory nerve to the vagus. The author gives Gowers as one of those whose writings he consulted in the preparation of this manual. Now, Dr Gowers, in his *Diseases of the Nervous System*, vol. ii. p. 218, states that he has noted the condition of the palate in more than a hundred cases of facial paralysis, and in only one of these was there any evidence of paralysis of the soft palate, and even in that one it was on the opposite side to that of the facial palsy. Mr Owen, however, does not seem to be troubled by any doubts on the subject, and notwithstanding the clinical experience of Gowers, he simply asserts that the palatine muscles are supplied by the facial. In a similar manner he ignores Gowers's opinion as to the connexions of the fibres contained in the chorda tympani.

The extremities are much better done than the other parts of the body. We notice, however, a curious mistake in describing the fold of the nates. This is said to run "obliquely downwards and outwards in the direction of the lower border of the gluteus maximus." This statement, like a great many others, makes us suspect that this work has been written in the study, and not in the dissecting-room and hospital wards.

The sections on the female genitals contain no indications that the author is aware of the contributions that have been made to our

knowledge of their topographical anatomy within the last ten or fifteen years by His, Braune, Schultze, Hasse, Ranney, Hart, Symington, Barbour, and many others. The orifice of the vagina is said to be "embraced by the sphincter vaginae, which corresponds to the accelerator urinæ in the male; its spasmodic contraction produces the condition known as vaginismus." The late Dr Marion Sims was responsible for this theory; but we believe that the great majority of anatomists and gynecologists agree with Mr Lawson Tait, that the muscular fibres sometimes known by the name of sphincter vaginae do not act as constrictors of the vagina.

If the author considered it necessary to describe the process of parturition, he would have done well to have secured the co-operation of some obstetrician. As a teacher of anatomy and surgery for many years, his knowledge of the management of cases of labour must surely be somewhat theoretical, if not antiquated. The information given under this section confirms our suspicions. Thus we read on p. 367:—"To aid the expulsion of the foetus the nurse may advise the woman to blow hard into a bottle; in this way the lungs are filled, the diaphragm is depressed and fixed, the abdominal cavity is diminished, and its muscles are set to work." Again, to check post-partum hæmorrhage, it is stated that "the inert uterus must be stimulated to contract by cold, by bimanual pressure, by ergot, and by electricity," and there is no mention of the use of hot water in exciting uterine contractions.

This work is one of very unequal merit. We have directed attention to various points in which it is inaccurate or incomplete. At the same time we readily admit that such subjects as surface markings, the anatomy of the joints, the ligature of arteries, etc., are dealt with in a very satisfactory manner. Still, as a whole, we regard it as unworthy of the author's reputation.

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*The Bacteria of Asiatic Cholera.* By E. KLEIN, M.D., F.R.S.  
London and New York: Macmillan & Co.: 1889.

KOCH's doctrine that the comma-bacillus discovered by him is the sole and sufficient cause of Asiatic cholera has not met with the same general acceptance as has been accorded to the specific pathogenic character of the tubercle bacillus. The observed facts of the epidemiology of cholera invasions, their local and occasional variations, the immunity enjoyed by certain places, etc., could not be made to harmonize with the biological properties of the supposed cholera-bacterium. V. Pettenkofer, at the cholera conference in Berlin in 1884, even offered to swallow any amount of Koch's pure cultivations of the microbe. Dr Klein is also among the sceptics; he believes the cholera germ is yet undiscovered, and in the present volume he clearly and logically sets forth the reasons of his unbelief.

Cap. 1 deals with the history of the comma-bacillus, and Koch's

own definite and precise description of its distribution, morphological characters, and cultivation, is given in his own words as spoken at the Berlin conference of 1884.

Cap. 2 is devoted to the distribution of comma-bacilli. Dr Klein agrees with Koch that in every acute case of cholera *at first* the rice-water stools contain the bacilli, but he believes that there is no definite relation between their number and the severity of the attack, as maintained by Koch. Klein also denies that comma-bacilli or other bacteria are present, as a rule, in the tissue of the intestine of typical cholera cases; they may sometimes penetrate into the intestinal wall from the cavity of the bowel (page 39).

Cap. 3. "The Morphology of Choleraic Comma-bacilli." Their appearances in cholera stools and in artificial cultivations are exhaustively described and profusely illustrated, and the author's views as to their mode of propagation are stated.

Cap. 4. The morphological and cultural characters of the comma-bacilli are considered, and excellent drawings of how they show when grown on various media are given.

Cap. 5 is entitled, "Various Species of Comma-bacilli." It is pointed out that Koch at one time believed that no other disease than cholera afforded samples of these microbes. He did not know that they occurred in the saliva of the mouth and in various intestinal discharges. Finkler and Prior demonstrated in 1884 that comma-bacilli were to be found in the dejections of *cholera nostras*; this fact cannot be criticised away. Dr T. R. Lewis pointed out that the fluid of the mouth contained comma-bacilli. Deneke discovered them in stale cheese. They have been found by the author in cases of diarrhœa, dysentery, and phthisis (page 96); and Gamaleia of Odessa has found them in an acute fatal disease of fowls, and that their morphological and cultural characters are identical with those of Koch's comma-bacilli.

Cap. 6. "Diagnostic Value of Choleraic Comma-bacilli." The author agrees, while not admitting them as cause, with Koch, that the finding of them is of very great importance diagnostically, and that sanitary officers would be justified in treating cases in which they were found as cases of cholera.

Cap. 7. "Experimental Production of Cholera." The experiments of Nicati and Rietsch, Van Ermengem, Gamaleia, Cunningham, and others, are noticed; and the author seems to consider that the results obtained do not differ much from the symptoms of ptomaine poisoning.

Cap. 8. "The Infectiveness of Cholera." The author points out the large assumptions which must be made before one can believe that in an epidemic of cholera it is the comma-bacilli which are the cause (pages 141 *et seq.*) He maintains with Von Pettenkofer, that in important points our knowledge concerning comma-bacilli does not harmonize with well-established epidemiological facts. Why do epidemics depend on locality and season? Why do certain



localities enjoy a special immunity? In pages 163 to 165 some interesting experiments of the author on monkeys are related.

Cap. 9. "Other Bacteria in Cholera." The observations of the author, Lewis and Cunningham, Von Emmerich and Roy, Brown and Sherrington, and Messrs Neil Macleod and Walter J. Miller (the last two briefly), are alluded to.

The little volume contains a very great deal of controversial matter, and the author lays down his own views and conclusions in the clearest and most definite manner, while giving those of his opponents with the utmost candour and fairness. To all who investigate cholera, whether from "localistic" or "contagionistic" standpoints, it will furnish invaluable instruction. The illustrations intercalated in the text, forty in number, are all very excellent.

*Revendication de la priorité de la Découverte des Vaccins du Cholera asiatique.* Par le Dr D. J. FERRÁN. Barcelone, 1888.

In this pamphlet of ninety-four pages, addressed to the President of the Academy of Sciences of Paris, Dr Ferrán reprints his various communications presented to that Academy, as well as others not so presented. He claims that in 1885 and 1886 he had already made known his prophylaxis against cholera,—three years, therefore, before Dr Gamaleia of Odessa had reported his researches, the only novelty of which was the fact that the comma-bacillus increased in virulence by being passed through the pigeon.

There is no question that Ferrán was the first to inoculate man with the cholera virus with the view of rendering him immune, a thing which Gamaleia had only done on the viler bodies of guinea-pigs and pigeons. The expediency and protective value of Ferrán's inoculations, not doubted by himself, have been called in question by many, among others by Gibier and Van Ermengem, who say that the percentage of victims to cholera was as great among the inoculated as among those not protected by such treatment (*Compt. rend.*, tome 101, p. 470, 1885).

In his "Note finale" (p. 93) Ferrán thinks the day will come when the water supplies of populations will be designedly charged with the necessary quantities of attenuated cultures of the cholera microbe, and that the potable waters so medicated will exercise a species of anti-choleraic vaccination on the happy drinkers thereof. "*Q'importe (says he) que les égouts se remplissent ensuite de virgules, si tout le monde a acquis l'immunité?*"

*Influenza e Paralisi Vasali.* Considerazione Pratiche del Dottor GIOVACCHINO DE AGOSTINI, Medico Chirurgo, Druent (Torinese).

*Influenza and Vascular Paralysis.* Practical Reflections by Dr GIO. DE AGOSTINI. G. Bruno, E.C., Torino.

THE author in studying the recent discussions was struck by a

phenomenon present in most of the individuals affected by influenza being utterly ignored. This refers to the alteration and paresis imported by the malady in question into the various vaso-motor nervous systems, whether originating in non-depurated substances in the blood, external agencies, central caloric increase, acute pain, or a mixture of all of these. The augmented sputa of the pulmonic cases, the jaundice, dysenteries, redoubled menstruations, he regards as derivatives from this important factor. In the treatment of influenza, his *cheval de bataille* was the free preliminary administration of calomel, which, rectifying the secretions, caused the distemper to take a milder course; then digitalis and cold fomentations applied locally to pulmonary, laryngeal, hepatic, and renal complications. His practice seems much influenced by the German School, many of whom he quotes, notwithstanding the general mistrust of the microbiological views of the Tedeschi, which we have noticed so widely diffused among Italian authors. The paper is written in a sprightly, incisive style, and is highly creditable to the erudition and professional insight of the author. His concluding invocation to "Madonna Igiene," beseeching her, who has been such a benefactress to the cities, to extend her mild, elevating, salutary sway to the rural communities as well, will induce a smiling, sympathetic acquiescence in the reader.

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*Affections Chirurgicales des Reins et des Uretères et des Capsules Surrénales.* Par A. LE DENTU, Prof. agrégé à la Faculté de Médecine de Paris. G. Masson, Editeur, Boulevard St Germain, Paris: 1889.

IN this most carefully elaborated work the author has extended the sphere of surgical supervision in diseases of the kidney beyond such limits as are commonly laid down.

Surgical affections of these organs he holds are such as may at any time necessitate surgical intervention. To apply such a maxim to all the systems of the body would go far to make the surgeon a physician. While certain kidney affections are from the outset probably amenable to local measures alone, there are others in which the interference of the surgeon may or may not be required. It would have been advantageous to entrust to medical text-books some of the matters contained in this work, although M. le Dentu has done good service in emphasizing the necessity of the surgeon being acquainted practically with the earliest indications and the course of the diseases in which his interference may be required. One may also admit the truth of his remark in justifying the inclusion of medical matter in the book, that the surgeon looks upon these affections from a point of view especially his own, having always in view certain possibilities of intervention, and looking for their indications.

The arrangement of the subjects is good, except that one would

prefer to find the methods of examining the kidneys described before entering on the study of the diseases on account of which the examination is made. In dealing with injuries of the kidney the author rightly discusses subcutaneous ruptures separately from wounds. The significance is dwelt on of hæmaturia, oliguria, and infiltration of urine, which last he considers to be rare, and the treatment of wounds is most exhaustively considered. In gunshot wounds M. le Dentu prefers, if nephrectomy must be performed, to delay the interference if possible. The chapter on lithiasis of the kidney is one of the most interesting, though in it perhaps the domain of medicine is most largely trenched on. The author believes the surgeon's rôle to begin whenever *gravel* or calculus is retained in the kidney. All degrees of lithiasis are considered together, being due to one pathological state; the influence of micro-organisms in causing calculous formation is touched on, but expression of opinion wisely reserved.

To give in one description an account of symptoms so diverse as those of over-acid urine and renal calculus being impossible, cases are arranged in three groups:—(1), *Latent* cases in which some chance may reveal in the kidney the cause of some obscure symptom—rheumatic pains or lumbago. (2), Typical cases of calculus with their attendant “bladder” symptoms, and secondary “irritative” phenomena. (3), The accidents of lithiasis, as colic, hæmaturia, uræmia. One may question the propriety of dissociating these “accidents” from the second group of cases.

M. le Dentu places a high value on percussion as a diagnostic means in kidney lithiasis, as eliciting tenderness where pressure does not, especially in the costal zone of the kidney. The remarks on reflex nephritis and on transient obstructive suppression as a consequence are suggestive, though not throwing much light on the matter. The value of natural mineral waters in treatment is precisely entered into, and the alternation of alkaline and diuretic waters advocated for robust patient.

As regards operative interference, the most interesting point is the recommendation of superficial incision of the parenchyma along its convex border in cases of numerous concretions, or where the tubules are loaded with crystalline deposits. The indications for this tolerably severe procedure are not very precisely given, but its value is to be noted.

In the chapters on pyelitis, nephritic abscess, and pyonephrosis, the important influence of infective organisms as a causal factor is most interestingly discussed, and in this relation also the difference between the last-named condition and suppurating hydronephrosis is laid down in theory, if not very clearly in clinical terms. The latter the author believes to be very rare.

Blood-clot is looked upon as the common starting point for perinephritic inflammation, and the localized form of perinephritis is stated to be more usual than is supposed, usually occurring behind

the kidney. The peritoneum, M. le Dentu believes, is not often opened into. He holds also that the danger and risk of fistula is greater if the abscess be secondary to any other lesion and of large size. If in a case of perinephric abscess and fistula nephrectomy is impracticable from adhesions, and other means have failed to effect cure, the author advocates the establishment of a drain through the iliac bone, an operation which according to his experience may be satisfactorily accomplished.

The remarks on the pathogeny of hydronephrosis are interesting, though not altogether convincing; it is, however, admitted that the pathogenic history of the condition is still to be reconstructed.

In its treatment, nephrectomy is only commended when the tumour is small, and in other cases incision where fluctuation is most decided and drainage is advocated.

The chapter on floating kidney is extremely well written, especially as regards indications for treatment; the operation for the relief of the condition is named nephropexy rather than nephrorraphy.

Hollowness of the loin on the affected side, as manifest on inspection, is noted as an important diagnostic sign in this condition; in renal troubles generally, inspection when the patient rests on his hands and knees is looked upon as a very valuable means towards diagnosis. For small enlargements of the organ, "ballotement" is recommended as likely to furnish information. Insistence is made on the importance, in exploratory procedures, of examining the *anterior* surface of the kidney; abdominal section is not regarded as really aiding thorough examination, and when the state of the opposite kidney is doubtful, the author would prefer to do a preliminary lumbar incision for exploration.

The chapter on operations for renal disease repeats a good deal that found place in former chapters; the oblique incision is recommended for lumbar nephrectomy, the kidney tissue being divided by thermo-cautery or scissors. "Transperitoneal" nephrectomy is advocated only in unusual circumstances, and in all instances a lumbar drain insisted on. In nephropexy M. le Dentu includes the parenchyma of the kidney in the suture.

One is inclined to think that the chapters on the ureters are unduly extended and precise, their morbid states being so usually secondary to those of kidneys or bladder, and the author admits that his remarks are based mainly on experiments and theoretical considerations; this is still more true of the pages devoted to the surgery of the supra-renal bodies.

The book is from first to last most thorough, and is illustrated by 34 plates and many interesting clinical notes; the bearing of experimental research, and especially of recent bacteriological observations on renal surgery, is recognised. Although not containing much of original interest, the book is one which cannot fail to be useful, and gives a good idea of the present position of renal surgery, especially amongst Continental surgeons.



*Through the Ivory Gate: Studies in Psychology and History.* By WILLIAM W. IRELAND, M.D. Edin. Edinburgh: Bell & Bradfute: 1889.

THE author of the *Blot upon the Brain* has continued his studies in the special department of psychology relating to the mental peculiarities and weaknesses of historical and notorious persons, and has presented us with this new volume. He writes in an eminently readable manner short biographies of the persons he has selected, describing more particularly the events in their lives which bring out prominently the morbid psychological characteristics. Amongst the historical personages whose mental characteristics Dr Ireland has investigated are Emanuel Swedenborg, Charles Guiteau, Louis Riel, King Louis of Bavaria, and Theodore of Abyssinia.

All these persons, in his opinion, suffered from some mental derangement,—that is to say, “they were led away by delusions or uncontrollable passions from the right comprehension of things, or the right line of conduct.” By studying the heredity, the sayings and the doings of these persons, and by analyzing their conduct, the author arrives at the above conclusions, and having stated the facts of the case, which must have cost him much trouble to collect, he enables the reader to form a judgment of his own in an easy and enjoyable manner. These psychological studies are valuable to those who regard the subject from a scientific point of view, and at the same time being written in popular language, and being full of incident, they cannot fail to interest the more thoughtful portion of the general public.

The most important section in the book is that relating to Emanuel Swedenborg, and it is right that so important a subject should receive this attention. His life has been considered by others from various points of view, but Dr Ireland does so mainly with his own special object before him. He states that he inherited a neurotic tendency from his father; in his childhood he was precocious, and had visions; his religious and general education were ill adapted to one with his neurotic constitution; and when working under pressure during his manhood he had hallucinations of all the senses. He was gifted with a powerful imagination, which he at first devoted to mechanical inventions, but finally it led him to speculate in psychology and religion. He had a tendency to receive his theories after a time as if they were realities, and to dogmatize. He also had an attack of acute mania, during which he had delusions of a religious nature, and imagined he conversed with spirits. The attack passed away, but a mental twist remained, and the seeds or suggestions of his subsequent delusions were received. Such are the medical facts which underlie Swedenborg's career; and those who desire a readable summary of the peculiar views of this wonderful and learned man, who through all his

mysticism and mistiness recognised some great truths, must consult Dr Ireland's book.

The cases of Charles Guiteau and of Louis Riel are of great medico-legal interest, and after carefully reviewing the facts of their lives and of their medico-legal examinations, Dr Ireland is of opinion that both were insane.

In a most interesting chapter the incidents connected with the insanity of King Louis of Bavaria are given, with a full account of the heroic death of Dr Gudden, who was drowned by the king.

The life of Theodore is also interesting.

Enough has been said to show that Dr Ireland has again succeeded in writing a pleasant and instructive book, which, it may be added, is well got up, and is illustrated with portraits.

*Hypnotism.—Contemporary Science Series.* By ALFRED MOLL.  
Pp. 379. London: Walter Scott: 1890.

HYPNOTISM has of late re-asserted its claim to the intelligent attention of the medical practitioner, and can no longer be relegated to the region of the occult arts, but demands the study given to a science. A valuable aid to this study will be found in the new volume of the *Contemporary Science Series*. This book is the translation of the excellent work by Alfred Moll, which has been more than once recently referred to in this Journal, and it has lost little or none of its force by the translation, which is a highly creditable one, possessing the unusual charm of conciseness. We can heartily recommend the book to all those who seek for a rational treatise on the subject in question.

*Leprosy and its Prevention, as Illustrated by Norwegian Experience.*  
By ROBSON ROOSE, M.D., LL.D., F.C.S. Pp. 96. London:  
H. K. Lewis: 1890.

THIS little *brochure* is evidently the outcome of the recent leprosy scare. The author states that during several visits to Norway he has had many opportunities of observing cases of leprosy. He does not profess to give a complete account of the disease, but his especial object is to point out the manner in which its spread may be arrested. The book contains four chapters: the first sketches the history and present distribution of leprosy, the second the forms and symptoms of the disease, the third its morbid anatomy and causation, and the last its treatment and prevention. The whole forms a readable account of the disorder; but we fail to see the necessity of the book for professional readers, as it contains little that is new, and for lay readers the pathology will be perplexing.

*Essay on Medical Pneumatology: a Physiological, Clinical, and Therapeutic Investigation of the Gases.* By J. N. DEMARQUET. Translated, with Notes, Additions, and Omissions, by SAMUEL S. WALLIAN, A.M., M.D. Pp. 288. Bibliography and Index. Philadelphia and London: F. A. Davis: 1889.

DEMARQUET published the original of this abbreviated translation in 1866, and the translator has done well in abbreviating it. His notes, comments, and additions are also valuable. The book should serve to stimulate interest in the subject of medical pneumatology, the history of which is excellently given. On reading the book we cannot say that we are struck with any remarkable advantage which oxygen possesses as a therapeutic agent as against the success obtained by other agents. Still we believe with the author, that although scepticism is on the whole good, yet it is quite probable that more extended experience and the more accurate investigation now in vogue, may prove the employment of various gases in both medical and surgical treatment to be of greater value than we are at present inclined to admit.

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*Massage and the Original Swedish Movements; their Application to Various Diseases of the Body.* By KURRE W. OSTROM. Pp. 97. London: H. K. Lewis: 1890.

THE author of this short treatise is the Instructor in Massage and Swedish Movements in the Hospital of the University of Pennsylvania and the Philadelphia Polyclinic and College for Graduates in Medicine. He admits that several books have been written on the subject by physicians, but he states that none of them have been sufficiently explicit in telling how to perform the manipulations, and what cases may be benefited by the treatment. Although this statement is not quite correct, as Josef Schreiber has written an excellent practical work on massage, our author has performed a useful service in publishing this brief and clearly written manual, and we can recommend it to all who wish to gain a knowledge of a method of procedure which is daily finding more favour in professional circles. The price of the volume should also insure it a wide circulation.

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*The Constitutional Requirements for Tropical Climates, and Observations on the Sequel of Disease Contracted in India.* By Sir WILLIAM MOORE, K.C.I.E. Pp. 122, and Index. London: J. & A. Churchill: 1890.

THE first part of this book will be useful to all medical men who are consulted on the propriety or otherwise of any one proceeding to a tropical climate; and we quite agree with the author when he says that, although physicians do doubtless consider the subject,

yet the matter is not given the prominence it deserves in books or by authors treating of tropical climates and diseases, especially in regard to predisposition to disease, idiosyncrasy, and temperament. Sir William Moore refers to the principal depressing influences of a tropical climate, viz., heat, chills, the prevalence of a scorbutic taint, malaria, want of sleep, and syphilitic taint. Referring to diseases already experienced and hereditary tendency to disease, the author says that the following diseases, or a tendency to them, should be counted as sufficient to prevent a person proceeding to the tropics:—Great obesity, ague or malarial cachexia, albuminuria, alcoholic craving, asthma, phthisis in the later stages, diabetes, epilepsy, goitre, gout and rheumatism, hæmophilia, hæmorrhoids, hysteria, tendency to insanity, insomnia, predisposition to hepatic congestion, to scrofula, or to scurvy, as well as syphilis, either acquired or hereditary. After referring in detail to these bars to residence in the tropics, idiosyncrasy and sex are wisely dealt with.

In the second part of this treatise the author refers to the sequel of diseases contracted abroad, and all physicians who have to deal with returned Anglo-Indians will find it well repay their trouble to read the book carefully.

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*A Manual of Public Health and Sanitary Science.* A Practical Guide to the "Public Health (Scotland) Act, 1867," and the "Local Government (Scotland) Act, 1889." By T. G. NASMYTH, M.D., D.Sc., D.P.H. Camb. Edinburgh: T. & T. Clark: 1890.

THE above is one of the many books dealing with the subject of public health which the Local Government Act of last year has brought to light. Dr Nasmyth is well known for his original work on the air of coal-mines and his interest in all that pertains to sanitary science. It was therefore with considerable interest that we received the announcement, that a gentleman actively engaged in sanitation had published a book dealing with the Public Health Act and other related Acts, not, as is generally the case, from the legal, but from the medical and scientific point of view.

The idea is a good one, and the time was opportune for providing, as the title-page announces, "a practical guide for the use of county councillors, members of district committees, and their officers under these Acts." A *vade mecum* for the new county councillors, men entrusted with great responsibilities, if matters of public health are no longer to remain "a dead letter,"—a manual which would enable them to grasp clearly the various medical and sanitary questions as they arose in their districts,—would be of the greatest advantage both to themselves and to their responsible officials. Practically, however, such a book is exceedingly difficult to write, and, indeed, we doubt whether it is possible to produce a perfectly satisfactory result. The author commences by giving, in the first two chapters, a *résumé* of the Public Health and Local Government Acts. He



then takes up the consideration of Soil, Air, Water, Drainage, etc., and succinctly, yet clearly, gives a mass of information on these subjects brought up to date and compiled from standard works. We cannot too highly commend the pains Dr Nasmyth has been at in assimilating and arranging the large number of facts on so many wide and important subjects; and, except for one or two small inaccuracies and deficiencies, the book will be an undoubted and valuable addition to the literary armamentarium of the medical officer of health and sanitary inspector.

We must, however, while fully recognising its merits, differ from him in the view that the book fulfils the requirements of a practical guide for county councillors and members of district committees. In our opinion it is quite unfitted for this. County councillors are, we have not the slightest doubt, both willing and eager to perform their duties conscientiously and well; they may even, for the sake of what is expected of them in instituting a new era in sanitation throughout Scotland, be inclined to study the principles of sanitary science so as to master the practical questions in which their duties will involve them. To ask them, however, to master half the information in the present volume is to add a new terror to public-spirited men becoming county councillors. Thus, for example, we find the intricate processes for the examination of air and water given at length and in detail; the method of preparing "nutrient jelly," of making "plate cultivations," etc.,—matters of absolutely no practical use for county councillors. Our idea of a practical guide would be one embracing such questions as "injury to health" and the various conditions and circumstances usually held to constitute it; the extremely important subject of milk in its relation to health and disease, the causes and modes of milk contamination, and the rules which ought to guide a local authority in dealing with an epidemic, etc. These are some of the practical questions which will continually come under the consideration of county councillors, and about which a guide-book based on experience and practice would be invaluable.

While differing from Dr Nasmyth on these points, we repeat our opinion, that it is a book full of information, which will be found useful to medical officers, and on which, for the most part, they may thoroughly rely.

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*Elements of Sanitary Science.* By Surgeon-Major C. J. M'NALLY, M.D., Madras. Pp. 260, and Index; 5 Plates. London: H. K. Lewis: 1889.

THIS book, which has been written primarily for the instruction of the educated classes in India, is especially addressed to those residing in the Madras Presidency; but, with the exception of the chapter on sanitary law, it applies to all parts of India alike. The author has been at great pains to produce a concise and readable

book, and we can thoroughly recommend it to medical and civil officers and others who are preparing to go out to India or to other tropical regions.

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*Flushing and Morbid Blushing: their Pathology and Treatment.*

By HARRY CAMPBELL, M.D., B.S. (Lond.), Senior Assistant Physician and Pathologist to the North-West London Hospital. London: H. K. Lewis: 1890.

THERE are certain symptoms which are too often regarded by medical men as either trivial, and, therefore, not worth considering seriously, or are looked on as associated phenomena, valuable in themselves as indications, but if not actually incapable of being treated, that their management is included in that of the morbid condition in relation to which they occur. Such are frequently exaggerations of physiological processes, and are only unnatural because in excess, over-frequent, or ill-timed. The states which Dr Campbell has subjected to a rigid and careful analysis would possibly fall scientifically under the category alluded to, yet are the cause of much distress to those who suffer from them. When closely investigated they are found to be much more interesting, and at the same time far more complex than appears probable on casual consideration. The subject is one, at all events, which has not been systematically inquired into previously, and if the practical results obtained are perhaps hardly commensurate to the labour expended, the author deserves great credit for the thoroughness of study evinced on every page. The phraseology is well chosen; yet one now and then comes across an expression which startles by its novelty, as when Dr Campbell speaks of "different degrees of objectivization in mentation." The book is beautifully printed and illustrated with a number of highly instructive diagrams. It fills very successfully a gap in medical literature.

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*Handbook of Materia Medica and Therapeutics.* By SAMUEL O. L. POTTER, M.D., Professor of the Theory and Practice of Medicine, San Francisco, etc. Second Edition, Revised and Enlarged. Philadelphia: P. Blakiston, Son, & Co.: 1890.

DR POTTER in this handbook includes the physiological action of drugs, the special therapeutics of disease, official and extemporaneous pharmacy, and minute directions for prescription writing.

It is an excellent work of reference to advanced students and young practitioners, for whom it is specially intended, but is too large ever to become a popular text-book for students.

Professor Potter has brought the book well up to date, and we wish it a wide circulation.

*Electricity and the Methods of its Employment in removing Superfluous Hair and other Facial Blemishes.* By PLYM. S. HAYES, A.M., M.D., Prof. of Gynecology and Electro-Therapeutics, Chicago Polyclinic, etc. Chicago: W. T. Keener: 1889.

THIS little volume will be found to contain a very fair *résumé* of the modes of employing electricity in various forms of cutaneous disfigurement. We observe that in speaking of the hair a variety is alluded to of which the author has not seen any account in the text-books. Such are pale coloured, short, feebly attached hairs, growing apparently from the corium, and regarded by those operated on as returns after electrolysis. These are undoubtedly the Beete-Haare or bed hairs so fully described by Unna in Ziemssen's Handbook and elsewhere, which grow from the prickle-cell layer of the hair follicle, and most likely do spring from some point of the follicular wall which has escaped destruction. Dr Hayes prefers a needle with a somewhat bulbous end, made from a jeweller's brooch, ground, and with its temper drawn, to the ordinary fine No. 16 sharp-pointed needle, for the electrolysis of hairs, but the sharp-pointed one for all other purposes. The pain of the operation can, he states, be in certain cases alleviated by the application of an ointment containing cocaine, menthol, chloral, and lanoline. The manner of using electrolysis in the treatment of *nævi*, fibromata and papillomata, xanthoma, acne, and rosacea, is also explained. The book furnishes sufficient instruction to enable anyone to use electricity for the objects mentioned.

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*Papers on the Pure Oral Instruction of the Deaf and Dumb.* By WILLIAM VAN PRAAGH, Director of the School for Teachers of the Association for the Oral Instruction of the Deaf and Dumb. Sold by the Author.

UNDER this title we find about twenty pages, consisting of reprints of papers designed to convince the reader that the best form of instruction for the deaf and dumb is to teach them to speak by the tentative exercise of the muscles of the throat and lips, and then lip reading,—that is to say, to guess at the words uttered by carefully scanning the motions of the lips of the speaker. We do not pretend to sufficient experience to pronounce a dogmatic opinion on the subject, but what facts have come before us have left us unconvinced that the oral or German method of instruction is the best for the deaf and dumb. To call it the natural method is absurd. The difficulty of teaching either the process of speaking or lip reading is so great both for the teacher and the taught, that acquisition of real knowledge is seriously hindered in order to obtain what is often a barren accomplishment. The speech taught is never fluent, is drawling and unpleasant; and picking up words from looking at the motions of the lips is something so wholly different to hearing speech, that

it is waste of time to enlarge upon it. Speech taught in this way is readily dropped, and as Mr Praagh himself notices, there is a besetting tendency in the deaf to take to signs. Nevertheless, the miracle of the deaf speaking and following speech exhibited in picked cases at examinations and on public platforms has such an attraction for parents and philanthropists, that teachers of the deaf and dumb have been constrained to adopt the oral method, often much against their private opinions. We should not say one word against the oral method if it did not try to supplant instruction by figurative signs and finger language, which we believe to be the best method of conveying knowledge to the deaf. We see it asserted in a book on diseases of the ear, that it is medical men who have had the greatest influence in recommending the oral method. We advise such of them as have not yet completed their acquaintance with the subject to visit deaf and dumb schools, and inquire in a careful and critical spirit into the rival systems of teaching, and also to inquire into the results of the teaching years after the pupils have left school.

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*The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the year 1888.* London: H. K. Lewis: 1889.

THESE reports hold a position midway between those of the other great hospitals in London and the wretched little affairs in which managers record their thankfulness to a Divine Providence, and tell their subscribers how wonderful is the work they have been able to accomplish. St Guy's, St Thomas's, and other hospitals publish annually in their reports a series of excellent papers by members of their staffs. The Middlesex Hospital does not publish special papers, but elaborates the reports in such a way as to bring out the great value of their statistics of disease. Thus in the present volume the Medical Registrar gives a synopsis of the symptoms and the treatment of their cases of enteric fever. Several cases of special interest are also recorded in detail. The Surgical Registrar publishes an analytical summary of 744 cases of cancer treated from 1882 to 1888, and abstracts of 146 cases of cancer and tumour formation under treatment during the year. From the Pathological Registrar we have an analysis of 259 autopsies performed during the year, and a short abstract of each. From such reports the profession will learn something of much greater value than from bald statements that so many hundreds of people have received treatment for certain affections, and that a certain number of these were labourers, certain others masons, or others governesses, and so on.



## Part Third.

### MEETINGS OF SOCIETIES.

#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

##### SESSION LXIX.—MEETING VIII.

*Wednesday, 19th March 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

##### EXHIBITION OF PATIENTS.

*Dr John Thomson* showed two cases of HABIT SPASM, or HABIT CHOREA. The former name was that which was applied to the condition by Dr Gowers, the latter being used by Dr Weir Mitchell and other American writers. In some German works the same affection was described under the name of chorea electrica, although it had, of course, nothing to do with the Italian malarial disease known under the same name. It had also nothing to do with ordinary chorea minor, from which it differed in many ways,—there was none of the inco-ordination and general restlessness characteristic of that disease, but the patient was able to perform any ordinary movement or work quite well with trifling interruptions, and during the intervals between the muscular contractions was quite at rest. The course was also different—this disease often, as in Case I., lasting much longer than ordinary chorea ever did. The disease consisted in the occurrence at varying intervals of sudden, momentary, muscular contractions, resembling those produced by the passage of a weak galvanic current. These sometimes occurred in the corresponding muscles, and at the same time on the two sides of the body; but as frequently the muscles affected on the two sides were different, and even when they were the same they were affected at different times. The movements ceased during sleep; they were aggravated by emotional excitement; they could be controlled for a considerable time by voluntary effort, but not entirely.

CASE I.—A girl (E. F.), 12 years old. The distribution of the spasmodic movements was as follows:—(1.) Constantly recurring winking of the two eyes, usually together, sometimes alternately. (2.) Backward and forward movement of the entire scalp. (3.) Twitching upwards of the right angle of the mouth. (4.) Twitching downwards and outwards of the left angle of the mouth,—this, when severe, being occasionally accompanied by a movement of the lower jaw to the left and a spasmodic contraction of the left sterno-mastoid. (5.) Shrugging of the shoulders. (6.) Pronation and supination movements of the forearms. (7.) Very strong and constantly recurring contractions of the quadriceps femoris.

All the movements were slightly stronger on the left side. The

tongue, when protruded, showed slight vermicular movements in its substance, as seen in chorea minor. The knee-jerks were usually rather hard to elicit, but when percussion was made on the tendon at the moment of a spasm, a very much exaggerated movement of the leg occurred. As to the duration of the disease,—the left eye and the shoulders had been affected for five years, the right eye for about three years. The movements of the face, arms, and thighs were first noticed about six months ago, and those of the scalp about two or three months ago. The child's general health was tolerably good, but for about a year she had suffered from time to time from night-terrors, and she had chronic hypertrophy of the tonsils and of the adenoid tissue in the naso-pharynx.

The child had been under treatment at the New Town Dispensary for several months, and had had a fair trial of liq. arsenicalis and bromide of potash; she was now getting Easton's syrup. Dr McKenzie Johnston had drawn Dr Thomson's attention to the fact that spasmodic nervous affections of this nature were sometimes dependent on morbid conditions of the naso-pharynx, and the effect of local treatment of the naso-pharynx was about to be tried in this patient. The well-known fact that night-terrors such as she suffered from were often cured by attention to chronic conditions of the throat, seemed further to encourage the hope that local treatment might be successful.

CASE II.—A boy (A. S.), aged 6 years, suffering from a much slighter degree of the same affection, the only symptoms being a regularly recurring winking of the two eyes (simultaneous), and an occasional irregular twitching of the angles of the mouth. He was also said to have a peculiar, short, nervous cough. He had only been affected for ten days. Like the other patient, he had chronic enlargement of the tonsils, and he also suffered from thread-worms. He was otherwise healthy.

*Dr Thomson* also showed a LITTLE GIRL, aged 5, with a lesion in the region of the right crus cerebri. She also was a New Town Dispensary patient, having been sent by Dr J. C. Webster. Her symptoms were,—Paresis of the left arm and leg, with weakness of the face on the same side, including the orbicularis palpebrarum; paralysis of the third nerve on the right side, which caused ptosis of the right eye, dilatation and immobility of the pupil, inability to turn that eye to the left, diminished upward and downward movement of it, and constant turning of the head to the left side. There was congestion with œdema of the optic discs. The child sometimes complained of slight headache. There was considerable mental torpor. There had been no vomiting and no fits. Sensibility was intact. The power of accommodation of the left eye seemed perfect. The child had never had diarrhœa. The weakness of the left side of the face had been noticed seven weeks ago, that of the arm and leg four weeks ago, but for from four to six weeks before

that the child had occasionally complained of cramps in these limbs. The ptosis had been first noticed three weeks ago. There was no family history of tuberculosis, and no history of syphilis. The distribution of the paralysis indicated some lesion, probably a tumour, in the region of the right crus cerebri, but there did not seem to be sufficient data to justify a positive diagnosis of the nature of the lesion. In all probability, however, it was a tubercular mass.

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SESSION LXIX.—MEETING IX.

*Wednesday, 2nd April 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

I. EXHIBITION OF PATIENTS.

1. *Dr John Thomson* showed a case of SPORADIC CRETINISM (Cretinoid Idiocy), with an œdematous or (?) myxœdematoid condition of the right side of the body. The patient (I. J.) was 19 months old. She was the elder of two children, the other being apparently healthy. The parents were born, and had always lived, in Edinburgh. No relatives had been affected in a similar way, nor with goitre. The child's birth was not difficult. The mother had been subject to fits (probably epileptic), and had many of these during her pregnancy; she had also had a good deal of work and worry during that time. The most remarkable feature of the case was the swollen, apparently œdematous condition of the subcutaneous connective tissue, which condition was almost confined to the right half of the body. On the face this was present on both sides, though markedly more on the right side. The right ear and the right upper and lower extremities were all much affected, and a great deal larger than the corresponding parts on the left side, which (with the exception of some slight puffiness of the left instep) seemed quite normal. The right labium minus was so much swollen as to be more than six times as large as the left, and it projected out of the vulva. The swollen tissues pitted on pressure to some extent. The condition had been noticed within ten days of birth. The long duration of the swelling, the look of some of the swollen parts, and the nature of the case, seemed to suggest the possibility that the pathological condition might be analogous to that found in cases of myxœdema. The child was a little below the average size (28 inches), she was pale and flabby, and had a large protuberant abdomen, but otherwise her general health was not interfered with to any great extent. The face was broad and swollen, but not otherwise very characteristic. The hair was plentiful and good. There was no special abnormality of the cranium or skeleton. The palate was normal; the tongue seemed a little large; the ears were badly developed; the neck was short, and very thick from accumulation of fat. No thyroid gland could be felt, and the isthmus was certainly wanting. The hands were rather narrow, and the fingers long and slender. There were

accumulations of fat in the axillæ and supra-clavicular spaces. The largest was that in the left axilla, which was about the size of half a small orange, and surrounded four or five glands which dated from vaccination a year before. That in the right supra-clavicular region was about the size of a walnut, and contained two glands. The corresponding one on the left side was about two-thirds of that size, and contained no glands. That in the right axilla was so small as to be scarcely noticeable. The child's mental condition was distinctly deficient and peculiar. She emptied her bladder and bowel without giving any warning. She was extremely shy, and averse to being even looked at by strangers. She was particularly fond of animals, but very jealous of other children. She was tolerably observant, and very fond of bright colours. She could say one or two short words, but her mother thought that her mental condition was getting worse. The case was regarded as a slight one of the form of genetous idiocy described by Dr Ireland as cretinoid, and by many other writers as sporadic cretinism.

2. *Dr Allan Jamieson* showed—(1.) **LYMPHANGIOMA CIRCUMSCRIPTUM.** On the right shoulder of this little boy, aged 8, extending inwards for about three inches, will be seen a cluster of vesicles closely aggregated together, having a somewhat warty aspect, though on the first glance not at all unlike the vesicles in herpes zoster. His mother states that the first ones appeared when he was a few months old, and that fresh ones have come out from time to time since, while others have vanished, leaving no trace. Thus there was at one period a group nearer the spine. Running over several will be seen vascular tufts or striæ. The vesicles themselves have very resistant walls, and are evidently deep-seated. All agree that they are connected with the lymphatic system. When punctured, a clear fluid escapes, alkaline in reaction, and containing a few lymph corpuscles. Sangster found in one of Mr Hutchinson's cases flask shaped spaces in the corium, due, he believed, to dilatation of the lymphatics. Only about ten cases have been recorded, and a good representation of four of these will be found in the first part of the *International Atlas of Rare Skin Diseases*, now in course of publication. The disease has been met with on the face, neck, deltoid, and scapular regions, on the arm, thigh, and back; it most commonly occurs in males, and is limited to one locality in the same person. It differs from lymphangioma tuberosum multiplex of Kaposi, inasmuch as the little tumours in the latter are solid, and are scattered irregularly all over the body. Recurrence has, according to Crocker, taken place after destruction by caustics or excision in or near the scar. I propose to try in this case the salicylic and creasote plaster muslin of Unna, which has proved of such value in lupus. I should have mentioned that I am indebted to my friend and former assistant, Dr Blaikie, for the opportunity of studying this



rare case. (2.) NÆVUS PUNCTIFORMIS. A tall, well-grown lad, aged 18. Some five or six years ago he noticed a small red mark on his right forearm, near the elbow, after practising on the horizontal bar, and the number of these for a time steadily increased. For at least two years, perhaps longer, no fresh ones seem to have come out. The eruption will be found scattered with some degree of regularity over the deltoid region, the back of the upper arm, both aspects of the forearm, and is even faintly discoverable on the wrist and on the back of the hand. It consists of patches, which, on close inspection, are seen to be made up of minute dots of a bright or dark red colour—some, indeed, are rather very short lines, and between these the skin is a very pale pink. The puncta are grouped, are extremely superficial, and are not, apparently, connected with hair follicles. It is difficult to say whether they fade much on pressure, but they certainly do not disappear, and when frozen by the ether spray are still visible. Besides those on the arm there are also several groups running along the margin of the fifth rib on the right side. In November 1888 Dr Edington, then my assistant at the Royal Infirmary, cut out a small portion of skin, including some puncta, and made sections of this. The epidermis was normal, but at the apices of some of the papillæ were small collections of blood, apparently in a condition of stasis, as in some a small crystal was discoverable. There were also prolongations of the rete Malpighi found dipping down into the corium. These, Dr Edington thought, embraced the extravasations, and cut them off, but this I have been so far unable to verify. The condition seems to be a nævus, extremely superficial, and associated with punctiform venous capillary stases. I was much interested to find in the January number of Mr Jonathan Hutchinson's *Archives of Surgery* a case almost exactly similar described, and illustrated by a figure which might with scarcely any change have been drawn from mine. The interest in both instances is the spread of the process, not by a continuous edge, as in ordinary capillary nævus, but by the formation of new foci, by the production of satellites. Mr Hutchinson regards the complaint as related to Lymphangioma circumscriptum, or, as he prefers to label it, Lupus lymphaticus. In the latter are to be seen little tufts of capillaries, and, according to Mr Hutchinson, it has been met with in connexion with port-wine mark. He also states that both are apt to leave scars, very faint, it is true, but still appreciable. Such, however, are not visible in either case as here represented. (3.) PITYRIASIS RUBRA PILARIS. A furnaceman, aged 26, who has enjoyed excellent health. On the 13th July of last year he believes he got a chill, and shortly after the present ailment commenced on his face, and thence spread till the entire surface is involved. He exhibits a typical example of a disease the precise nosological position of which is perhaps not yet quite defined. We owe our acquaintance with it mainly to French authors. Originally described by Devergie, it is to Brocq,

to Cæsar Boeck, but particularly to Ernest Besnier, the famed professor at the Saint Louis Hospital, Paris, who last year published an exhaustive account of it in the *Annales de Dermatologie*, that we are indebted for our information concerning it. The name conveys a good conception of the complaint. Pityriasis connotes the exfoliation of fine, dry, white scales; rubra, the substratum of pretty intense and universal redness; and pilaris, since the hair system is markedly involved. It is not, however, limited to the parts provided with hair follicles, for a peculiar dryness and scaliness of the palms, and an interference with the nutrition of the nails, are met with in cases which last long. With all this there is little observable disturbance of the general health. Some, occasionally very severe, itchiness accompanies it, most pronounced at night. There is dryness of the hair and much dandruff. The lanugo becomes broken off, and our patient states that the hair on his face has become decidedly thinner. It is easy everywhere to make out the acuminate red papules which are so prominent a feature. On the chest these are well pronounced; on the arms their definite relation to the hair system is distinct, along with epidermic accumulations round the mouths of the follicles, not now so great as they were before treatment was commenced. At one time, when he first came under notice, the arms seemed as if covered with a coating of mortar, the skin was bound down and somewhat torn from scratching. As a result of nightly baths of potassa sulphurata and starch, which he has had in Ward 31—to which, through the kindness of Dr Wyllie, he has been admitted—the skin has assumed a softer and more pliant aspect and feel; on the legs, but especially on the nates, there are to be seen dull purplish-red papules, not unlike those of lichen ruber planus, but acuminate, not glancing, and each bearing a small scale on its summit. Between these the integument will be seen to present a somewhat tawny appearance. The face is red with papules and blotches, and flakes of a fine branny dust. On the neck the condition more resembles eczema than elsewhere; perhaps from exposure, motion, and washing, some degree of eczema has really been superadded. It will be seen that it does not present the multiform character of an eczema, while it differs from the lichen ruber acuminatus of Hebra, inasmuch as the health has not suffered, while though he has been treated continuously with arsenic, regarded by Hebra as a specific in lichen, he has derived no benefit whatever. The diagnostic points have been so well stated by M. Besnier that I cannot do better than quote his words. “The thick, greasy, pityriasis-like deposit on the scalp, the scaly redness of the face, with tension of the skin and a slight degree of ectropion, or its uniform envelopment by a dry, plaster like, adherent coating, the minute white, gray, or red scaly xero-dermic prominences, having a hair in the centre, and notable on the dorsum of the phalanges as their favourite locality, the sym-

metrical exfoliation of the palmar and plantar surfaces, the alterations of the lower segment of the nails and of their bed resembling rush-pith, the branny redness of the skin, with fine exaggeration of the cutaneous folds, the subacute course, gradual or chronic, the absence of severe constitutional symptoms, etc., etc., make this disease, when thus pronounced, one of the most characteristic and easiest of recognition." The disease is certainly rare, and has probably been confounded with eczema, with lichen ruber planus, with lichen pilaris, and with some cases of psoriasis. The treatment so far has been the baths above mentioned, and the subsequent application of a paste of equal parts of sesame oil, lime water, prepared chalk, and oxide of zinc, with two per cent. of salicylic acid; under this the itching has ceased, and the skin has already, in less than a fortnight, become much improved.

## II. EXHIBITION OF SPECIMEN.

*Dr John Thomson* showed a SUPERNUMERARY COSTAL CARTILAGE removed post-mortem from an otherwise well-formed infant. The supernumerary cartilage articulated with the sternum on the right side, half-way between the cartilages of the 3rd and 4th ribs, and passed outwards between these ribs, ending in the muscle in a sharp point about 1 inch beyond the line of the costo-chondroid articulations. It was considerably narrower than the normal cartilages.

## III. ORIGINAL COMMUNICATIONS.

1. *Dr D. Wallace* read a paper on MOTOR PARALYSIS AFTER HYPODERMIC INJECTION OF ETHER, which appears at page 244 of this Journal.

*Mr Chiene* congratulated Mr Wallace on the clearness and succinctness of his paper. The speaker had learned that in future when he had to inject ether he would inject it into the subcutaneous tissue, and not into the substance of a muscle. Judging from the after results in those two cases, Mr Chiene was of opinion that it was important to take every care in the injection of ether.

*Dr James Ritchie* asked whether the rarity of the condition described by Dr Wallace might not be due to the infrequency of the injection of ether into muscle. Ergotine was usually injected into a muscle, was not ether given subcutaneously? He asked for information.

*Dr Wallace*, in the first place, thanked the members of the Society for the very kind way in which they had received his paper. No doubt it was most useful to inject ether subcutaneously, but some physicians recommended that it should be injected deeply into a muscle, and in some cases, as in those he had just quoted, the desire of the surgeon was to introduce the needle at the most accessible part, and in the most rapid way. He wished to warn medical men

against the injection of ether into muscles unless the muscle chosen was a large and fleshy one.

2. *Dr C. Begg* read a paper on the PATHOLOGY AND SUCCESSFUL TREATMENT OF CHRONIC TROPICAL DIARRHŒA (KNOWN AS SPRUE), which appears at page 230 of this Journal.

*Dr Dods* congratulated *Dr Begg* on his interesting paper. Every one who had practised in the tropics knew what an intractable complaint chronic diarrhœa was. He had always looked upon it as a disease resulting from the effects of malaria, and connected with the altered state of the blood found in the anæmia of the malarial cachexia. He believed that there was also some change in the constitution of the bile; and although the motions seemed free from bile, yet bile might be there, although not recognised from an absence of colouring matter. As to the presence of microbes as a cause of "sprue," he thought that that fact required some further proof, and it was quite possible that santonine acted in some other way than as a germicide. But in whatever way it acts, they must congratulate *Dr Begg* on having found a remedy for the chronic diarrhœa of the tropics.

*Dr Begg* in reply said, with regard to the identity of sprue with hill diarrhœa of India, he had read Sir Joseph Fayrer's book, and it seemed to give a decided opinion on the point. His experience had been that the disease, as they saw it in North China, was quite severe enough; and after consulting every available record of it in other places, he could not but believe that he had been dealing with examples of the same disease; but be that as it may, he would point to his last case treated in this country, an undoubted example of hill diarrhœa, a case of failure of all treatment, and a severe case of long standing, and at the same time, he was glad to say, a case giving the most marked results after the course of treatment with santonine. He could not lay too great stress on the details of the treatment. He considered it essential, *first*, to prepare the patient by clearing out the intestinal canal—he never gave his santonine till he got a clear percussion note on bowel; *secondly*, he considered it necessary to dissolve the drug in olive oil; and, *thirdly*, clinical experience had made him insist on the patient obtaining the yellow crystals. He had had unsatisfactory results from the white. He had to thank the Society for their cordial reception of his paper.

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## OBSTETRICAL SOCIETY OF EDINBURGH.

### SESSION LI.—MEETING IX.

*Wednesday, 9th July 1890.—Dr BERRY HART, President, in the Chair.*

I. *Dr Underhill* exhibited the PLACENTA FROM A CASE OF TRIPLETS. There were two placentæ connected together by a narrow line of



the membranes, but quite distinct from one another. The foetuses were each contained in a separate bag of membranes. Two were females and the third a male. The male and the larger of the two females were attached to the larger placenta; the other female to the small placenta.

II. *Dr Halliday Croom* showed—(1), some PHOTOGRAPHS of a case in which the Porro-Cæsarean section was performed; (2), A FIBRO-CYSTIC TUMOUR OF UTERUS; (3), PAPILLOMA OF OVARY.

III. *Drs Halliday Croom and J. C. Webster* read their paper on TUBO-ABDOMINAL GESTATION, which will appear in a future number of this Journal.

*Professor Simpson* thought the Society was greatly to be congratulated on having brought before it the record of a case of ectopic gestation so valuable both in its clinical history and in its pathological anatomy. A case with clinical history alone would have been an interesting contribution; it was more than doubly interesting to have superadded to this an anatomical record which seemed so satisfactorily to clear up the previous history. Of course it would have been more pleasant for them to have had to congratulate Dr Croom on a successful operation; but it was a case where recovery was hardly to be hoped for, and most admirable use had been made of the opportunity of post-mortem examination to clear our ideas and advance our knowledge of tubal gestations. It was of prime importance to have had so clearly established the possibility of the occurrence of the escape from the tube of the main portion of the ovum, whilst the placenta remained to develop within the canal; and however the escape had occurred, it was interesting to note that the ovum wall was constituted to all appearance chiefly, if not entirely, by the amnion. This would correspond with what we see in ordinary labour. During the dilatation of the cervix the lower pole of the ovum ordinarily begins to descend invested with decidua from the lower uterine segment. In certain cases the decidua remains adherent, and the lower pole of the ovum comes down bare, but consisting still of its two layers, chorion and amnion. In yet other cases, the chorion, which is the weakest of the two membranes, gives way and remains adherent to the decidua, while the amnion alone gets driven down, and may become detached from the whole interior of the chorion down even to the foot of the umbilical cord. It remained to be determined in the case brought before the Society to-night whether the amnion had become separated from the placental surface after or before the operation. In any case Dr Webster had rendered a most important service in this still somewhat obscure department of Midwifery, in demonstrating beyond possibility of doubt that an ovum could make its escape partially from the tube into the peritoneal cavity, and continue its development up to the full term of gestation.

*Dr Barbour* had been specially interested in *Dr Croom's* description of the phenomena of labour in this case. It was, as far as he knew, the first complete account of the changes in the uterus when labour comes on in an extra-uterine gestation at full-time. The occurrence of the extensive hæmorrhage into the pelvis after the operation leading to such a remarkable displacement of the uterus is especially noteworthy; and it reminded him of a case in which a large hæmatocele developed after the puncture of an extra-uterine gestation in the pouch of Douglas. In that case, death was probably the result of internal bleeding. *Dr Webster's* portion of the paper was a contribution of the greatest value—the most thorough working-up of a case by means of frozen sections that he was aware of, and implying an enormous amount of work. He had seen a case which resembled this one in so far that the foetus was found lying almost free among the intestines, while the placenta was in a sac in the pelvis. The cavity in which the foetus was consisted only of adherent intestines which could be easily torn apart from one another. With regard to the case which *Dr Webster* referred to in his paper, the investigation was not carried further, because the frozen section had to be mounted as a preparation for teaching purposes.

*Dr Berry Hart* considered the paper read a most important one both in its clinical and pathological aspects. *Dr Croom's* account of the spurious labour occurring in the woman was most useful, and showed how little we really knew of the onset of labour in ordinary cases. *Dr Webster's* work must have been very laborious, but it was most successful, and clearly proved that this case was one of abdominal pregnancy with the placenta in the Fallopian tube, and foetus and amnion in the peritoneal cavity. We had yet to wait for the demonstration of an intra-peritoneal placenta.

*Dr Halliday Croom* replied.

IV. *Dr F. J. Baidon* read his paper on A CASE OF ENCEPHALOCELE. On November 22nd, 1889, he was called in by *Dr A. Jones* of Southport to assist him in the following case:—Mrs M., aged 38, had had five children previously, all healthy. She had had pain for twenty-four hours, and on examination he found the os uteri fully dilated, the head presenting in the first position. *Dr Jones* gave chloroform, and he applied Simpson's long forceps, having some difficulty in locking them, and more in delivering the head. Attached to the head at the nape of the neck was a large cyst, which he now exhibited. The pedicle was thick, measuring 10 centimetres in circumference. The cyst, when supported by a flat surface, measured 17 × 15 centimetres. The walls were thin, and at one part had been pressed either by the forceps or against the pelvic brim, and a piece the size of a florin was red and dusky. The child in other respects was a healthy female. On November 24th it was evident that the portion of the cyst was sloughing, and they had to

attempt its removal. Dr Jones again requested his assistance. They first tapped the cyst, and drew off about 20 ounces of bloody fluid; then passed an armed needle through the pedicle, and tied it in two pieces, and cut it off. In spite of the ligature the hæmorrhage was considerable, and they could only get it checked by touching the stump with solid nitrate of silver. The child had no convulsions at the time, nor could they detect any imperfection in the occipital bone. On the 25th the bleeding again commenced, and Dr Jones had much trouble in stopping it, and on the 26th the child had a convulsion and died. The mother made a good recovery. No post-mortem on the child was allowed, but no doubt a small communication existed between the cyst and the interior of the head, and the case was probably hopeless from the first.

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## Part South.

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### PERISCOPE.

#### MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

THE ACTION OF CAFFEINE.—At the meeting of the Académie de Médecine, held 11th March 1890, M. Germain Sée reported the results of a series of studies which he had recently completed with M. Lapicque as to the action of caffeine on the motor and respiratory functions in a normal state and in a state of inanition (*La Tribune Médicale*, 13th March 1890). Professor Sée concludes his paper with the following *résumé*:—1. Caffeine, in small repeated doses, when given to soldiers on the march, facilitates muscular work, not by directly increasing the activity of the muscle itself, but by acting on the cerebro and cerebro-spinal system. The consequence of this double action is the diminution of the sensation of effort and the prevention of the feeling of fatigue. 2. Caffeine prevents shortness of breath and palpitation as a consequence of severe effort. 3. Under its use individuals subjected to prolonged violent exertion acquire the characteristics of persons in perfect physical training. 4. In producing this excitation of the cerebro-spinal motor system, on which depends the increase of muscular tonicity, caffeine increases the loss of carbon by the organism, but it does not restrain the loss of nitrogen. It does not thus in reality save tissue waste. 5. A means of preventing tissue waste, and so preventing the effects of inanition from fasting, is absolutely impossible of realization, since such a state of affairs could only be attained by absolute inaction or immobility, a state of affairs which, it is hardly necessary to state, cannot exist. With caffeine, then, the direct

opposite ensues—that is, although there is intense work rendered impossible, it is only obtained at the expense of the organism. The animal machine can only operate at the expense of tissue combustion, and it is precisely in facilitating this combustion that caffeine enables muscular work even during fasting. 6. Caffeine has thus not the property of replacing foods, but only replaces the tonic general excitation which the general ingestion of foods produces. If one could assume that it was the direct, immediate, instantaneous action of foods which stimulated the stomach and the nervous system, and that their alimentary value does not extend beyond this, they could be substituted by stimulants. Finally, Professor Sée maintains that the action of caffeine on the heart and blood-vessels is different from what is generally maintained, and is a much more active stimulant than is usually believed.—*Therapeutic Gazette*, May 1890.

THE PHYSIOLOGICAL PROPERTIES OF THE KOLA NUT.—We have already in previous issues of the *Gazette* called attention to the value of the kola nut in reducing tissue-change, and its similarity of action in this respect to the fresh coco-leaves. At a meeting of the Académie de Médecine, held 8th April 1890 (*La Tribune Médicale*, 10th April 1890), Dr M. Heckel read a paper on this subject, in which he claims that, even after the extraction of the caffeine by chloroform, his experiments have shown him that the powder of the kola nut still possesses marked properties, especially exerted on the muscular tissue and on nervous excitability. He states that the red substance noted by Sée in his work on the African kola, and which remains in the nut after extraction with chloroform, is a highly complex body, in which the active principles are still to be found, although he has not yet succeeded in isolating them. The negroes in tropical Africa are able to make a march in one day of more than forty miles, living simply on a single fresh kola nut, and Heckel claims that he has obtained himself equally surprising results through the use of the dry kola. He states that two officers stationed at Perpignan in 1888 made the ascent of Mount Canigou (nearly 9000 feet in height), and walked for twelve hours without fatigue, resting only for about twenty to twenty-five minutes in all that time, eating only a small quantity of kola, corresponding to about two grains of caffeine. After this prolonged exertion the muscular power did not seem to be depressed; and Heckel states that numerous other officers and soldiers have been able to undergo severe and sustained muscular effort without feeling fatigue while under the influence of small quantities of kola nut. Further, he states that several officers of the infantry regiment on the 11th of July 1888, in fifteen and a half hours, walked forty miles, and during this time they likewise only consumed enough kola corresponding to a little over two grains of caffeine. Heckel states that there are contained in the kola nut other principles than



caffeine, which are of considerable value in this connexion. The author states that at his suggestion the French Alpine Club has adopted kola as a stimulant or nutrient in their mountain-climbing expeditions, and their general testimony is that it has rendered them the greatest service, especially in preventing loss of breath and in sustaining muscular strength.—*Therapeutic Gazette*, May 1890.

## MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

*Berlin. Klin. Wochens.*, No. 19, 1890.—Prof. A. Neisser of Breslau has experimented with aristol in order to ascertain its anti-bacterial efficacy. He used cultures of micro-organisms which differed greatly both morphologically and biologically, such as staphylococcus pyog. aur., bacillus anthracis, vibrio cholerae. All experiments with aristol powder failed. Dissolved in ether, better results were obtained, but not of a very successful nature; aristol ointments were useless. Therapeutically he tried it in—1. Seven cases of soft sores; the result was absolutely negative; the ulcers did not clean, and rather enlarged, notwithstanding careful application.

2. No influence over gonococcus was obtained.

3. A chronic infiltrated eczema of the popliteal space did not seem to benefit much.

4. Thirteen cases of lupus (which, however, had previously been treated by spooning or corrosives) did remarkably well under the use of aristol ointments. But lupus nodules and lupus ulcers which were primarily treated by aristol did not benefit at all.

5. Other ulcerations, such as late forms of syphilis, ulcerous scrofuloderms, scraped gland-abscesses, and bubo wounds, did well under aristol.

6 and 7. Lichen ruber planus was not bettered. Psoriasis in all forms, fresh and old cases, was favourably influenced after weeks of treatment in only two cases. Aristol has, however, this to recommend it, that it seldom occasions the irritation which chrysarobin does.

*Ibidem*, No. 20.—Schmitz of Neuenahr relates six cases in which he considers that diabetes mellitus was conveyed from husband to wife, or *vice versa*, and one of transference from patient to nurse. In No. 23 the same physician draws attention to cystitis as an occasional complication of diabetes; and Bruns of Hanover relates several cases of peripheral neuritic paralysis in the same disease. This paralysis affects with preference the lower extremities and the territories of the crural and obturator nerves.

*Ibidem*, No. 21.—Behrend describes trichomycosis nodosa, the "Piedra" of South America, and gives drawings of the appearances

of the fungus which causes it, as he obtained them by pure cultivations on agar-agar and sour bread pap. In the same number Dr Groedel relates cases of abnormal action of the heart in consequence of disturbances of its innervation. Tachycardia (quickened action) may be permanent or paroxysmal. Generally the heart itself is intact, but vitium cordis may be present, although not necessarily the cause of the rapid pulsation. As to etiology, psychical causes generally originate the first attack, or again dietetic faults, or pressure of thyroid tumours, or aneurism of the aortic arch. But probably all this is mere hypothesis. As to the physiological explanation of tachycardia, we must think of damage of great intensity; the vagus is either paralyzed, or is about to become so, or this paralysis may be accompanied by irritation of the sympathetic, or possibly irritative conditions of the quickening motor nerve apparatus of the heart, combined with functional disturbance of the vagus by interruption of its normally permanent stimulated state.

*Ibidem*, No. 22.—Guido Bacelli of Rome sums up his experience of intravenous injections of quinine in malaria. It struck him to bring quinine salts in direct contact with the blood corpuscles, which, *à priori*, seemed a logical and suitable proceeding, and he hoped thereby to see a quicker and more energetic action of the medicine, as well as obtain the maximum benefit by a minimum quantity of the drug. The therapeutical problem presented itself as follows:—If the specific remedy were brought into direct contact with the blood corpuscles, would the parasites causing the disease be destroyed in a more rapid and permanent manner than can be obtained by the exhibition of quinine in more usual ways, including subcutaneous injections, particularly in cases where these ways had been tried and failed, as in the pernicious forms? The author set himself to establish the following points: The minimum dose needed for perfect and permanent cure; the suitable indications for the application of the remedy, in order to prevent the fever paroxysm, or check it as far as possible or prevent relapse; the histological modifications of the blood, already altered by the infective organism, after contact with the remedy.

As author found that acid solutions of quinine were dangerous in animals, he selected neutral solution of hydrochlorate of quinine in distilled water, with a small percentage of sodium chloride to prevent injurious action of the water on the red corpuscles. The formula was—

|                      |   |          |
|----------------------|---|----------|
| Hydrochlorat. quin., | . | 1·00 gr. |
| Sod. chlorid.,       | . | ·75 "    |
| Distill. water,      | . | 10·00 "  |

After convincing himself that doses of 5 to 10 centigrammes did not harm rabbits, he confidently injected similar doses in man. He soon, however, found that larger doses had to be used, and at last he mounted up to doses of one gramme, which were followed by

very happy results, as well in regard to harmlessness as in unfailing therapeutic operation. In none of the patients did a real relapse occur after one injection of such a dose.

The practical result of his researches seems to show that the introduction of quinine into the veins offers a safe means of introducing the total dose necessary for a cure at once into the blood mass. This dose is not less than one gramme, and its proportion to the whole blood mass may be represented as 1 : 5000.

Another problem of practical moment is the proper time to use the injection, and the author lays down the following propositions:—

1. Quinine, even in gramme dose, is unable to cut short the paroxysm of fever if administered at the beginning, or even three hours before the attack.

2. Neither can the injection at the acme of the attack shorten it in the least.

3. Injected during the decrease or end of the attack, it prevents entirely the subsequent attack, or mitigates it very much.

4. In subcontinuous forms, which are generally obstinate, it was best to inject when temperature began to fall, because commonly in a short time the subcontinuous became intermittent in type, with decreasing attacks, and frequently also with quicker crises.

The author closes his paper by saying, that in very bad cases, and when other ways of absorption have proved unsatisfactory, the injection into the veins, care for exact technique (which he describes), and blameless asepsis presupposed, offers the most energetic, safe, and quick method for the therapy of pernicious forms of malaria.

*Ibidem*, No. 24.—Stilling of Strassburg writes on the use of anilin dyestuffs as antiseptics, and their application in therapeutics. He has used them greatly in ophthalmological practice, and has found good results in blepharitis, conjunctivitis, eczemas, corneal abscesses, keratitis, iritis, and even in sympathetic ophthalmia. The author believes in the methyl violet introduced into commerce under the name of "pyoctanin."

*Ibidem*, No. 28.—Otto Scheffels of Wiesbaden, on the other hand, relates his experiences of pyoctanin treatment of corneal ulcers, and is obliged to negative Stilling's enthusiastic assertions, stating, however, that his (Scheffels') negative results may be owing to some defect in the technique or manner of application of the remedy.

*Ibidem*, No. 29.—Tietze of Breslau gives a short report of twelve total and partial extirpations of the larynx undertaken in ten individuals.

Of four total extirpations, one ended fatally in three weeks. In this case a partial operation had been previously done, but disease returned so extensively in the remnant of the larynx left and in the tonsils that the whole had to be removed; the jugular vein and

carotid had to be ligatured, and hemiplegia set in of opposite side of body, and death was preceded by pneumonia. Of three other patients, one was alive and free of recurrence for four years; disease then returned in thyroid gland, cervical glands, the anterior wall of œsophagus, and patient succumbed after an extensive operation. The second patient lived a year, and then died after recurrence. The third died six months after total extirpation, and eleven after a previous partial one; arrosion of the innominate vein was the cause of death.

Of the eight patients who underwent partial extirpation, four died within fourteen days (three of putrid bronchitis or aspiratory pneumonia, "Schulckpneumonie," and one of peritonitis from unknown cause, as autopsy was not permitted). Of the others, the total extirpation had to be undertaken in two; the third had no return till nine months; the fourth, six months after operation, remains well. Some of the temporarily-healed patients followed their usual occupations; two used an artificial larynx, the others contented themselves without. None of them could do without the tracheal cannula.

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### OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

ON ZOSTER.—Dr Féré has minutely observed four cases of zoster recently, and has remarked a peculiar symptom in two—a diffuse radialgia. This is a painful sensation in the spinal region, both spontaneous and increased by pressure, in cases of thoracic zona. This pain has its location along the chain of the spinal apophyses, and a little on each side of these, and extended from the third dorsal vertebra to the second lumbar in the cases observed. The pain, though in lessening severity, persisted even after the traces of the eruption had vanished, inasmuch as pressure reinduced it. Three of the cases were epileptics, and might, therefore, be cited in support of the opinion of Dreyforus, who has ascribed an important position to the neuropathic constitution. But in contrast to this idea the objection may be made that zona is not very frequent among epileptics. Féré examines all the patients at the Bicetre once a month—divested of their clothing—and is certain that these three cases are the only ones which have occurred among five hundred epileptics under his care in the last three years, and none of the others showed distinct cicatrices indicative of previous attacks. Even admitting this predisposition, one must admit that the coincidence of these eruptions must have been due to a particular exciting cause. Are we to invoke the theory of infection maintained, in particular, by M. Landouzy? If so, is there a specific



infective material which is to be sought in the fluid of the vesicles, as Byrom Bramwell and Hare have endeavoured to find? or is zona not rather a dermato-neurosis, indicative of disturbances of nutrition of the nerve elements in course of the evolution of an infectious malady, as the facts observed by M. Letulle would suggest. In favour of this latter opinion, one might cite those instances in which zona occurs in the course of spinal affections with gross tissue lesions, or in course of complaints associated with spinal irritation, as in hysteria; in fact, zona may occur in connexion with a spinal neuralgia. The characters of the spinal pain have already served as facts which support the idea of a central origin in cases of neuralgia, and among the characters of the spinal pain most capable of conveying the impression of a meningeal or spinal irritation special notice must be paid to its diffusion over a wide area of the vertebral column. Sometimes the predominant seat of pain is much below the point of emergence of the nerves affected with neuralgia. May this not be a form of epidemic cerebro-spinal meningitis, of which the zona is to be regarded as a "secondary symptom?" This explanation would apply to herpes occurring in the course of infectious diseases, in which meningeal complications are not infrequent.—*Revue de Médecine*, 1890.

OLEUM CHÆNOCETI. — Guldberg, of Christiania, has investigated this oil, prepared from the blubber of the bottlenose whale, and which can be obtained in a pure state from Herr J. Sell in Christiania. It has a much greater specific gravity than the oils commonly used in medicine, and seems to possess the power of penetrating the epidermis in a remarkable degree. This property has been ascribed to it for centuries, and Guldberg cites from a manuscript dating from 1250 as follows:—"Norse whales, the bottlenosed, are not edible by human beings; for the fat contained in them cannot be digested either by men or animals, since it runs everywhere through a man, and even through wood, and can hardly be kept in horn vessels, if allowed to stand long in them." This oil he considers is well suited to render the skin rapidly oily, flexible, and tough. Dr C. Boeck has experimented with the oil, and some of his modes of prescribing it are subjoined—

R Ol. chænoceti,  
Chloroformi, āā.

This is preferable to any other vehicle for chloroform, when used as a liniment.

|   |                |   |   |       |
|---|----------------|---|---|-------|
| R | Aristol,       | . | . | 10·00 |
|   | Ol. chænoceti, | . | . | 80·0  |
|   | Ceræ albæ,     | . | . | 20·0  |
| R | Iodoformi,     | . | . | 10·0  |
|   | Ol. chænoceti, | . | . | 80·0  |
|   | Ceræ albæ,     | . | . | 20·0  |

This oil is said to be 40 per cent. cheaper than olive oil, and for many purposes a cheap, penetrating animal oil is to be preferred to a vegetable one.—*Monatshefte für praktische Dermatologie*, 15th May 1890.

URTICARIA IN INFANCY AND CHILDHOOD.—Dr Colcott Fox maintains that ordinary urticaria, as known in adults, is very rare indeed in tender childhood, but that the lichen urticatus of Bateman is a true urticaria. In this the urticaria takes on a special form, in which the wheals have their centres occupied by an inflammatory lesion, which is left behind over the evanescent which subsides. This inflammatory lesion is most commonly a papule, sometimes a vesicle, occasionally a pustule. He is also of opinion that the conditions described as lichen urticatus, varicella, prurigo (infantile prurigo of English authors, following measles and vaccination), and probably Crocker's papular, vesicular, and pustular vaccination rashes, are only phases of one and the same disease, viz., the urticaria of infancy and childhood. He has long been convinced that in the urticaria of childhood the primary lesion is a wheal, either a red measles, or a red and white, or white firm projection, and that the inflammatory lesions rapidly formed are really accessory and secondary, and remain in the site of the wheals after the latter have subsided. The wheal has in its centre an inflammatory lesion, *almost invariably present*, which, if not visible, may be made apparent by pressure on the wheal. The wheal with this central papule looks like the bite of an insect, and, indeed, may be so induced; but this is the essential cause only in exceptional cases. Like other inflammatory lesions, this may pass through three stages of papulation, vesiculation, and pustulation,—the latter lesions being perhaps most common in certain situations, as in the hands and feet. Season of the year has a marked influence in originating and in intensifying it. It is most severe in warm weather, though in some respects it bears a resemblance to heliois prurigo,—a rare disease in this country. Dr Fox thinks that there is need for further observation to decide if lichen urticatus does develop into true prurigo, but the diagnosis between the two complaints in childhood is difficult, if not impossible. The papules may simulate those of lichen planus pretty closely. Scabies is the disease with which this urticaria in all its phases is most constantly confounded. The two most important elements of distinction are the fact that only one child in a family is attacked, and no evidence of contagion being discoverable, all special treatment directed against scabies fails. As regards treatment, the cases must in the first instance be arranged on general principles, but as it is necessary to obtain rest at night, chloral or bromide of potassium should be administered. In the pustular cases the dilute ammoniated mercury ointment in paste suits best. In the papular cases lotions do most good, and the one Fox finds most serviceable is a teaspoonful to a pint of water of a mixture of

half an ounce of liq. plumbi subacetatis, and two and a half ounces of liq. carbonis detergens. Gastro-intestinal disturbance in some form is nearly always present, and this is commonly of an irritating kind. Consequently his favourite remedy is carbonate of bismuth with carbonate of magnesia, to which, if constipation is present, he adds sulphate of magnesia. Any local irritation, insects, coarse clothing, or agencies which tend to quicken the circulation, are to be removed.—*British Journal of Dermatology*, May-June 1890.

**GLYCERINUM SAPONATUM.**—An addition to the already numerous substances which have recently been proposed as excipients for drugs employed externally has been made by Hans v. Hebra, and is one which promises well. This is a combination of glycerine with an absolutely neutral cocoa-nut oil acid soap, but any acid soap made from tallow is equally good (and in our opinion much better). There are two varieties of this glycerinum saponatum: an 80 per cent., which contains 80 per cent. of glycerine and 20 per cent. of soap basis; and a 92 per cent., which contains that amount of glycerine and 8 per cent. of soap. A little of this rubbed well into the skin of the hands makes it smooth and soft, and causes any cracks or fissures which may be present to heal. This glycerine saponatum can be employed as an excipient for many substances. Thus salicylic acid can be combined with it, as

|                                    |   |      |
|------------------------------------|---|------|
| 80 per cent. glycerinum saponatum, | . | 95.0 |
| Acidum salicylicum,                | . | 5.0, |

the mixture being effected by melting in a water-bath and stirring it gently. This preparation is useful in such cases as those of horny epidermic growths which it is desirable to cause to separate, as callosities of the soles or palms. Another useful preparation is one in which resorcin is added to the salicylic acid—

|                                    |   |      |
|------------------------------------|---|------|
| 80 per cent. glycerinum saponatum, | . | 90.0 |
| Acidum salicylicum,                | . | 5.0  |
| Resorcinum allissimum,             | . | 5.0  |

In making this, the salicylic acid is first added, then the resorcin at as low a temperature as possible. Hebra recommends this especially in seborrhœa capitis. In severe cases the head is first washed with water and spirilin saponatus kalinus to clean it; afterwards with the resorcin-salicylic glycerinum saponatum, followed by rubbing in some of the latter, after drying the head. He notes also much success in sycosis. In addition to daily shaving and epilation, the inunction of this preparation cured some long-standing cases in a couple of weeks. A creasote salicylic glycerinum saponatum, which contains five parts of each of the former and 90 parts of the 80 per cent. strength of the latter, has proved of much value in lupus, sometimes with, and in other cases without the employment of scraping previously. A zinc oxide glycerinum saponatum, made from the 92 per cent. strength, and in the pro-

portion of 95 parts to 5 of oxide of zinc, is an excellent cosmetic. It is hard in consistence, but placed on the skin it immediately becomes soft, and can be rubbed in till quite unobservable, especially if the finger be dipped in water. When this is used to chapped hands, these, even after one application, become smooth, soft, and white, and the burning feeling disappears. Both in mild cases of eczema and old weeping examples a similar preparation with the addition of starch does much good—

|                                    |        |
|------------------------------------|--------|
| 92 per cent. glycerinum saponatum, | . 78.0 |
| Zinc oxidum,                       | . 20.0 |
| Amylum,                            | . 2.0  |

A chrysarobin glycerinum saponatum acts much more energetically in psoriasis than other preparations of chrysarobin.

It consists of—

|                                    |        |
|------------------------------------|--------|
| 92 per cent. glycerinum saponatum, | . 90.0 |
| Chrysarobin,                       | . 10.0 |

Various other useful combinations are mentioned, for which we must direct attention to the paper itself.—“Die moderne Behandlung der Haut Krankheiten,” *Klinische Zeit und Streitfragen*, iv. Band, 1 u 2 Heft, 1890.

## PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. MILNE CHAPMAN, M.D., Inverness.

### HOT IRRIGATIONS AFTER DELIVERY (Deipser, *Centbl. f. Gyn.*, 22).

—The writer advises the use of vaginal irrigation as a prophylactic in all cases after delivery, and that shortly after the birth of the placenta, and for six days thereafter, irrigation with a quart of water at a temperature of 122° F. be practised, and claims many advantages for this system over that of employing warm antiseptic lotions—among others, that the method is harmless and always applicable; water of this temperature is well tolerated by the vagina, but the external genitals should be protected against the stream.

### A NEW METHOD FOR THE EXTRACTION OF THE FŒTUS BY THE BREECH (A. Mars, translated in *Amer. Jour. of Obstet.*, Jan. 1890).

—The writer, after giving a review of the various methods of extraction by the breech when lying high in the pelvis, describes a method by which he has succeeded in three cases in extracting the fœtus when the usual methods were unsuccessfully tried:—Case I., first position, os uteri entirely open, the fixed breech high in the pelvic entrance, beginning pulmonary œdema. Attempts at extraction having failed, he tried the following procedure:—After fixing the fundus uteri with the left hand, the right was placed flat in the vagina, pushed up between the uterine wall and the sacrum of the fœtus to its back, and when the palm of the hand lay upon



the sacral bone of the foetus, three fingers—*i.e.*, the second, third, and fourth—were extended along the spinal column, while the index and little fingers grasped the foetus over the crests of the ileum. During the pains the hand was continually pressed upon the back of the foetus by the uterus, thus insuring a firm hold. Whenever a pain came on he drew down as if he would extract his hand. By such tractions during the following pains the breech was brought down to the pelvic floor, when the hand could be taken out. After hooking the fingers over the hips the foetus was extracted by the ordinary method.

THE TREATMENT OF RUPTURE OF THE UTERUS (Leopold, *Arch. f. Gyn.*, Bd. 36, Heft 2; *The American Journal of Obstetrics*, May 1890).—The author reports four cases of complete rupture of the puerperal uterus, of which three recovered. From his experience and from a study of the literature he concludes that—(1.) Rupture of the uterus anteriorly at the vesico-uterine fold is more frequent than has been generally supposed. A rupture at this point does not necessarily produce severe hæmorrhage, and may be closed by forced antifixion of the uterus by pressure and bandage, together with plugging the ruptured uterus and vagina with iodoform gauze. (2.) The danger to the mother increases directly as the time since rupture and the forces used in attempting delivery, these factors leading to exhaustion from hæmorrhage, or infection. (3.) The child dies very soon after rupture. (4.) The mother may show considerable shock within a very short time, but quick assistance and successful control of hæmorrhage can save the woman, and allow a favourable prognosis in the most severe tears where the woman is seen at once. (5.) Deliver the child so as to cause the least risk to the mother; not by *turning*, as that would extend the tear, but by perforation or embryotomy. If already engaged in the lower pelvis, deliver manually or by forceps. (6.) If the child has escaped into the abdominal cavity, perform laparotomy at once under strict aseptic precautions. (7.) Before and after delivery by the natural passages, cleanse the parts thoroughly. Unite the edges of the rupture by apposition from within and without (traction by means of a hook or forceps and pressure bandage), place a long, thick wick of iodoform gauze in the uterus from the fundus through the vagina, packing it carefully behind the rupture. Remove this in eight to ten days. (8.) After a laparotomy, hæmorrhage being controlled and the abdominal cavity cleansed, suture the rupture if possible, or plug uterus and vagina with iodoform wick, and lead another through the tear and lower angle of the abdominal wound. (9.) Subsequent treatment according to the usual rules. (10.) In considering the question of laparotomy, always remember that hæmorrhage, which may be insignificant externally, may be considerable and dangerous within.

THE TREATMENT OF RUPTURE OF THE UTERUS (Schaeffer, *Am.*

*Jour. Med. Sc.*, January 1890).—The writer comes to the following conclusions:—Laparotomy is most successful in cases in which the foetus escapes into the peritoneal cavity with membranes intact, recoveries following in 60 to 77 per cent. Rupture of the uterus with escape of liquor amnii into the abdomen is attended with 44 per cent. of recoveries after laparotomy when no other operation has been previously attempted, but 25 per cent. when other measures have first been unsuccessfully tried, or when the vesico-uterine pouch has been opened. When abdominal viscera, with or without perforation, prolapse into the uterine rent, about 30 per cent. recover by laparotomy. When the rupture has invaded the vaginal fornices but one case has been saved, and that by uterine amputation. Porro's method gives better results than simple laparotomy when the cervix and vagina are extensively lacerated, when peritonitis has begun, when the anterior wall of the uterus ruptures and amniotic fluid escapes, and when other operations have been previously attempted.

ON ABDOMINAL SECTION IN TUBERCLE OF THE PERITONEUM AND UTERINE APPENDAGES (Gardner, *Montreal Medical Journal*, March 1890).—The writer reports five cases in which the abdomen was opened and peritoneal tuberculosis found, though in none of them had this been suspected. Three of the cases recovered, and the writer submits the following conclusions:—(1.) The hitherto accepted universally fatal prognosis of tubercular peritonitis must, as a result of what we have learnt by abdominal section, be revised. It is certain that recovery has taken place in many cases after abdominal section, and probably in others not so treated. (2.) My cases 4, 5, and 6 afford some evidence in favour of the theory that a cheesy deposit, the result of suppuration, is the parent of tubercle wherever found. (3.) In these cases the origin was in the suppurative disease of the appendages. (4.) The early removal of such focus is urgent in certain subjects strongly predisposed to tubercle, when other indications may not be strong enough to justify it. (5.) Abdominal section in these, as in less serious conditions, has, with proper precautions, been, as an operation, recovered from in such a large proportion of cases as to amply justify its performance to clear up a doubtful case. (6.) A mass of evidence has accumulated in favour of the beneficial effects of abdominal sections in tubercular peritonitis such as it is difficult to resist.

SURGICAL TREATMENT OF LOCAL AND GENERAL PERITONITIS (Gill-Wylie, *Amer. Jour. Obstet.*, March 1890).—The writer states his conviction that there are hundreds of men and women dying from peritonitis who might be easily saved if the medical profession would recognise the fact that a majority of such cases could be saved by prompt surgical interference. He then reports two cases of general peritonitis due to perforation successfully treated by free incisions, irrigation, and drainage. In conclusion he says:—When

there are symptoms of local peritonitis, intense pain and tenderness, followed by tympanitis and vomiting, with chilly sensations and rise of temperature, search should be made for the cause. As a rule the pain will soon become localized over the region of the Fallopian tubes, the cæcum or gall bladder, or some old ventral or inguinal hernia. If signs of a tumour or exudation can be definitely made out, and the general symptoms indicate the formation of pus, then the patient should be etherized and the pus reached by incision, the pus evacuated, and the cavity washed out and drained. If it is in or involves the tubes and ovaries, the abdomen should be opened; and if the tube or tubes are occluded and pus found, they, with the ovary or ovaries, should be removed. If the abscess is around the appendix vermiformis or cæcum, an incision should be made near the crest of the ileum, and the peritoneum dissected up till a place is reached where the peritoneum is adherent to the tumour, which should then be carefully opened, the pus evacuated, the sac washed out, and drainage-tube introduced without opening into the free cavity of the peritoneum. If it is about the gall-bladder—if the signs of pus can be made out—an incision over the sac should be made and the pus evacuated. If the general symptoms are severe and no localized centre of pus made out, then an incision should be made in the median line and the peritoneal cavity explored with the index finger. If then a pus sac is found—if it be so situated that it can be reached by another lateral incision and the pus evacuated without allowing it to escape into the free peritoneal cavity—it should be made, and the median incision closed. If it cannot be reached by a lateral incision where the wall of the sac is adherent to the abdominal wall, then the pus should be drawn off from the sac by an aspirator or trocar, and the cavity washed out clean with an antiseptic solution before it is freely opened and a drainage-tube inserted. If signs of general peritonitis show themselves—that is, by vomiting, obstinate constipation, tympanitis, etc.—then a free incision should be at once made in the median line, and the starting-point of the peritonitis found, if possible. If it is over the cæcum an incision should be made over it, and the pus washed out by means of hot water, of temperature  $110^{\circ}$  to  $115^{\circ}$ , run from a large fountain syringe with a large-sized glass drainage-tube attached to the rubber. After the free pus about the cæcum is well washed out, several fingers or the whole hand should be put into the abdominal cavity and the intestinal adhesions broken up, and all puddles of pus completely washed out. Then a glass drainage-tube should be introduced into each opening and the wounds closed around them, etc. In perityphlitis the operation should be done before the fourth day—the earlier the better—so as to prevent the chance of rupture and general septic peritonitis, which as a rule is attended by so much shock that no operation can do any good. As a rule general peritonitis from rupture of a septic abscess is attended with more shock and rapid failure and death than peritonitis from direct perforation. In

all cases of general peritonitis an exploratory incision should be made as early as possible after trying to lessen the tympanitis. If an exploratory operation does no good, it is not likely to add much to the danger. He especially advocates early operation in cases of general peritonitis, both those starting from a local peritonitis and those due to the free escape of septic matter into the peritoneum; and points out that to succeed in such cases it will not do to merely open the belly, allow pus to escape, put in a drainage-tube or gauze, and leave intestinal adhesions causing obstruction to remain to kill even more certainly than septic poison, or fail to empty and wash out all puddles of septic fluid encysted among the coils of intestines, but we must make free incisions large enough to introduce the hand and break up all adherent intestines, and freely wash the whole cavity of the peritoneum and put in two or more drainage-tubes.

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### SURGICAL PERISCOPE.

By KENNETH M. DOUGLAS, M.D., F.R.C.S. Edin.

THE SURGICAL TREATMENT OF MOVABLE KIDNEY (*New York Medical Journal*, 15th March 1890).—Dr M'Cosh, in an interesting paper on the Surgical Treatment of Movable Kidney, with report of four cases, draws attention to the distinction between "floating" and "movable" kidney, and to the predominance of these conditions in women. He believes nephrorraphy to be a thoroughly justifiable procedure, and certainly to be preferred to nephrectomy, which he holds to be warranted only in desperate and intractable cases. He advocates passing the sutures through the renal parenchyma, believing this method to be less likely to be followed by relapse. The wound he sutures rather than leave to granulate up. Resection of ribs he holds is unnecessary, and adds to the patient's dangers. The record of his four operations is interesting and encouraging, and the table of 177 cases of nephrorraphy at the end of the paper very instructive. Relapses were less frequent when the sutures entered the renal parenchyma, and if they take place, Dr M'Cosh believes, within the first few weeks. Patients well at the end of three months will be cured. Of 62 patients examined at the close of that period, 32 were cured and 14 improved.

TREATMENT OF PERFORATING WOUNDS OF STOMACH AND INTESTINES (*Revue de Chirurgie*, 10th February 1890).—MM. Reclus and Noguès, in dealing with wounds of the abdomen involving the intestines or stomach, and specially those inflicted by knives or revolver shots, dwell strongly on the possibility and frequency of spontaneous cure, and would permit laparotomy only upon certain very definite indications. These indications are,—dangerous bleeding, escape of gases or fæcal matter by the wound, peritonitis, and



certain special injuries, such as a horse's kick. They believe in the aphorism that "intestinal perforation is the almost necessary result of a penetrating wound of the abdomen," but unless the above symptoms presented themselves, they would leave the perforations to a natural cure. The frequency of this issue, and a comparison with the results of operative interference, are shown in elaborate statistical tables.

**CARCINOMA OF THE BLADDER** (*The Birmingham Medical Review*, March 1890).—Mr Gilbert Barling, in a paper on Carcinoma of the Bladder, after interesting remarks on the pathology of the condition, more especially as to the arrangement of the lymphatics of the bladder and the order of glandular involvements, compares the three modes of resection practised respectively by Antal, Sonnenburg, and Guyon. The former he advocates in cases where the growth is at the vertex, and expresses the hope that in the procedure of Guyon, viz., excision from "within outwards" (*i.e.*, as regards the bladder wall), we may find a valuable means of treatment, if infiltration of urine can be prevented by supra-pubic and perineal drainage combined. Mr Barling insists on the importance of early diagnosis, and believes that the cystoscope is the most certain means of differentiating between innocent and malignant tumours, as the symptoms of both may be the same. The form of carcinoma met with being of slow growth (mean duration, three years), and glandular injections late of occurring, and the fact that the bladder is merely an "organ for storage," are arguments favouring excision of the growths met with.

**VILLOUS TUMOURS OF THE BLADDER** (*Philadelphia Medical News*, 8th March 1890).—Dr Dixon Jones, in "A Study of Villous Tumours of the Bladder," based on the examination of a "myxofibrous" growth, doubts whether "villous" cancer is so mildly malignant as has been supposed. It is, in his view, merely a sub-variety of either epithelioma or medullary cancer; and in differentiating between it and papillomata, Dr Dixon Jones states that "epithelia alone cannot have a great diagnostic value, since they vary so much both in size and shape. The connective-tissue shreds, on the contrary, if voided with the urine in large quantities, are of positive diagnostic value, owing to their ramifying or cauliflower-like configuration." The paper is illustrated by drawings of such shreds from cases of papillomata.

**ABDOMINAL SECTION FOR TRAUMATISM** (*The Journal of the American Medical Association*, Chicago, 4th January 1890).—Prof. Morton of Philadelphia publishes a statistical table of 234 cases of abdominal section for traumatism. The cases are derived from many sources, and embrace all varieties of injury. He believes the results justify operation if there be "proof of the fact of peritoneal penetration." Median incision is, he says, universally commended as best, and the search for lesions is to be thorough. Drainage by a glass tube should be all but invariable. The tables

clearly show the advantage of early intervention after profound shock has passed off.

**FRACTURES THROUGH THE ANATOMICAL NECK OF THE HUMERUS.**—Dr Charles Powers, from an examination of 74 cases of fracture of the humerus above the surgical neck, finds that the anatomical neck is the site of injury in 23 cases (*i.e.*, 33 per cent.), and comes to these conclusions among others:—"Of the fractures which the humerus undergoes in its upper third, those which traverse its diameter above the surgical neck form a fairly large proportion, this proportion being much greater than is generally stated. The prognosis is, in general, good. Bony union may be expected, together with ultimately complete, or nearly complete, restoration of the joint functions.—*New York Medical Journal*, May 3, 1890.

**RADICAL CURE OF HERNIA.**—Mr Greig Smith considers that if the sac be removed, the ligated stump should always be returned into the abdomen, and not fixed in the hernial opening. He does not, however, approve of removing the sac, but uses it to plug the opening after the following method,—the placing *across* the ring, of the whole sac, or as much of it as may be necessary, and fixing it at the neck and the fundus by means of sutures passing through the parieties. As a simple and efficient means of bringing the walls of the sac together, he recommends twisting of the sac. In congenital cases, if needful, Mr Greig Smith cuts the sac away from the cord, leaving a long strip of sac attached to it. The wearing of a truss after operation he believes to be detrimental, causing absorption of inflammatory thickening.—*Bristol Medical-Chirurgical Journal*, March 1890 (J. W. Arrowsmith, Bristol).

**A RATIONAL BRACE FOR THE TREATMENT OF POTT'S DISEASE** is introduced by Dr Charles F. Stillmann of Chicago, who maintains that we must follow Nature's method, and hold the spine erect and slightly curved backwards. The first portion of the brace consists of a firm pelvic band, from which two strong strips pass upwards and terminate in two pads, one on either side of the protruding spinous processes, pressing over the transverse processes. The second part of the brace consists of a back frame, extending from the lower part of the sacrum to the first dorsal vertebra, and secured to the pelvic portion by clamps adjustable to any angle, thus enabling one to regulate the amount of forward pressure upon the kyphos. The brace is modified according to the region of the spine affected. The paper is illustrated by drawings of the apparatus.—*North-Western Medical Journal*, Minneapolis, March 1890.

**STRICTURE OF URETHRA.—NEW FORM OF URETHROTOME.**—Dr R. Stewart of Pittsburg believes that in attributing gleet to the presence of stricture one often ignores the real cause, and places two symptoms of a disease in the false relationship of cause and effect. He also expresses the opinion that stricture of large calibre may exist without giving rise to any trouble, and should only be

interfered with when it does so. Such strictures Dr Stewart finds by means of his urethrograph (described in the paper) are only evident when the canal is dilated beyond its normal limits. His urethrotome is so fashioned as to cut the stricture only, and is incapable of injuring the healthy parts of the canal, being "set" to the size of the individual urethra before the operation. It may, Dr Stewart says, be used without the exact localization of the stricture. —*New York Medical Journal*, April 12, 1890.

DISLOCATION FROM THE STERNUM OF THE FIFTH, SIXTH, AND SEVENTH RIBS.—An instance of this injury is quoted from the *Proceedings* of the Detroit Medical and Library Association (1889), in the *New York Medical Journal*, April 12, 1890.

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## Part Fifth.

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### MEDICAL NEWS.

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UNIVERSITY OF EDINBURGH.—*The following received the Degrees of Bachelor of Medicine and Master in Surgery*:—Henry Edward Alexander,† David Harrower Balfour, Tom Stevenson Balfour, George Hill Bartlett, John Alexander Bower, John Egerton Brandt (B.A.), Francis Leonard Brown (M.A.), Robert Brown,† John Brown-Lester, John Bruce, Herbert John Martin Buist, William Hartley Bunting, John Ridley Burnett, William Combe Burns, Donald Cameron, Henry Maurice Chasseaud, Robert Durward Clarkson (B.Sc.), George Craig, Peter Crerar, James Currie (M.A.), Somerville Boulnois Davis, James Adam Dick (B.A.), Walter Dickson, Charles James Whitehead Dixon,\* Carstairs Cumming Douglas,\* John Wheeler Dowden,† Alexander Dunbar, Alexander Scott Duncan, John Edmondson, Henry Edwards, Owen Foulkes Evans, Basil George Ewing, Donald Peter Maclaren Farquharson, Robert Matthew Fenn, Gerald Fitzgerald,\* Samuel Fleming, Richard Charles Fryer, Frederick Stephenson Genny, Sydney Alfred Gibbs, Edmund Valentine Gibson, Alexander Bruce Giles, Patrick Hunter Gillies, Edward Milliken Goldie, Edmund Henry Gonin, Henry Goudie, Alexander Charles Edward Gray, John David Gray, Herbert William Greatbatch, Eustache Charles Greaves, Thomas Arthur Green, Charles Norman Hamper, Rowland Edward Harrold, Alexander Henderson, James Milne Hermon, Albert George Horden, Robert Main Horne,\* John Howard-Jones, Thomas Edward Hughes, Henry Greville Huie, Joseph Hilliard Johnson, Edward Hughes Jones, Thomas Owen Jones, James M'Kinlay M'Intyre Kay, James Granville Kershaw, Johannes Jacobus Jurgen Kotzé, James Rudolf Paul Lambert, Lewis Turner Lancaster, James Lawson-Williams, Alfred Barnett Lazarus, Colin Forbes Lees,\* George Vernon Lockett, Arthur James M'Closky, Dugald M'Laren, Herbert Frederic Malabre, George Balfour Marshall,† Claude Buist Martin, Frank Mason, Frederick Arthur Maynard, George Stephen Meadows, Harry George Melville, James Ackworth Menzies, Henry Norman Duncan Milligan, Thomas Walker Mitchell, Robert Unwin Moffat, Julian Rudolph Monnier, George Home Munro, James M'Call Morrison, John Plowden Morton, Tom Dryden Nicholson, Percy Athelstan Nightingale, Maxwell Ogilvy-Ramsay (M.A.), Christopher Morley Ormsby, Owen Trafford Owen, James Cecil Palmer, Thomas Wright Parkinson, William Paterson,\* Roland James Pope (B.A.), William Donald Rankin (B.A.), James MacLagan Reid, John Alexander Robertson, John Begg Robertson, Robert Ingram Robertson, William Iverach Robertson, John Dewar Robson, James Samuel Yeaman Rogers, Robert Miller Ronaldson, David Rorie, Murdo Rose (M.A.), John Victor Walton Rutherford, George Herbert Rutter, John George Victor Sapp, Charles Walter Scott, Robert Scott, Lionel Sydney Senhouse, Richard Pechey Sharman, William Cecil Sharpe, Theodore Shennan, William Simmers (M.A.), Richard Butler Simmins (M.A.), James Fleming Smith (M.A.), William Chearnley Smith, William Corbet Watson Stain, Alfred James M'Farlane Stenhouse, G. W. Sutherland, John Edward

Thomas, George William Thompson,\* Alexander Thomson, Alfred Kerr Thomson, John Erskine Thomson, George Thornton, John Cecil Tosswill, Alexander Veitch, Arthur Hamilton Walker, William Kerr Walker,\* Lewis Johnstone Weatherbe. Sidney Roberts Webb, Arthur Robert August Wilhelm, Arnold Winkelried Williams,† John Williams, John David Williams, John Robert Williams, Alfred Oxley Wilson, George Morton Wilson, Orby Russell Morgan Wood, James Younan, David Pryde Young.

\* Indicates that the Candidate has passed the Examinations with First-Class Honours.

† Indicates that the Candidate has passed the Examinations with Second-Class Honours.

UNIVERSITY OF EDINBURGH.—The following is the official list of candidates who passed the first professional examination in July:—*Three Subjects*.—S. J. Aarons, C. H. Adamson, George Anderson, William Anderson, W. C. Anderson (M.A.), A. W. M. Auden (B.A.), M. A. Bamby, W. J. Bell, Robert Bennie, J. G. Bentham, S. F. Blakely, J. E. Blackburn, R. W. Blair, R. St G. S. Bond, C. W. Branch, D. J. S. Burt, James Cappie, William Catto (M.A.), R. M. Clark, W. R. Center (with distinction), C. M. Christy, R. A. G. Constantian, Charles Crerar, Donald Crerar, J. R. Crease, Andrew Croll, Ignatius Crook, N. C. Das, A. N. Davies, W. J. N. Davis, E. P. Dickin, G. A. Dickson, E. R. Dodds, J. D. Doherty, E. C. Edwards, L. C. Edwards, J. A. Featherstone, P. D. Fick, J. S. Flett (M.A.), T. D. Forbes, Harvie Forrester, Arthur Foster, P. W. Freyer, J. A. Fullarton, Thomas Gibson (M.A.), H. H. Gill, J. O. Goldie, Douglas Gordon, M. W. Gouhy-Chion, Lachlan Grant, W. Y. Grant, James Gray, W. A. Gray (B.A.), Arthur Gwyther, H. H. Hadden, F. H. Hardman, A. G. Hayden, George Hodges, C. A. Hogg, L. J. Howes, C. J. Hugo, J. A. Hunter, E. W. J. Ireland, W. E. Jameson, E. M. Jennings, S. E. Johnston, C. B. Johnstone, D. A. Johnstone, A. B. K. Jones, C. W. A. Jones, J. H. Jones, W. H. Jones, Charles Kerr, David Lawson (M.A.), J. A. Lee, R. E. Legat, G. F. Leicester, J. G. Leslie, Robert M'Camon, A. W. J. M'Fadden, William Mackirdy, Andrew M'Neil (B.A.), Archibald Macnicol, R. H. Makgill, W. C. Marsdin, W. R. Martine, A. C. Matchett, J. M. Menzies, T. B. Moore (B.A.), R. O. Morris (M.A.), A. J. M. Paget, J. B. Pearson, Tom Pettey, Andrew Philip, George Phillips, A. M. N. Pringle, S. W. Prowse (B.A.), Peter Rattray, C. H. Ridley, Thomas Roberts, E. C. Robertson, Alexander Rodger, A. P. Ross, G. H. Ruston-Harrison, J. M. Rutherford, C. R. Sheward, G. S. Shirt, John Sorley (M.A.), David Steele, J. G. Standing, A. P. Steavenson, F. W. M. Stephenson, W. F. Stevenson, W. R. Strapp, H. S. Sturrock, D. W. Sutherland, John Tennant (M.A.), David Thomas (M.A.), C. G. Thompson, W. H. Thomson, J. B. Tough, W. B. Turnbull, A. C. Turner, H. D. Vaillant, Frederick Wilson, G. H. Wilson, J. J. Wilson, R. J. T. Wright.

UNIVERSITY OF EDINBURGH.—The following is the official list of students at Edinburgh University who passed in the second professional examination in July:—A. J. Anderson, James Anderson (M.A.), F. R. K. Ball, J. T. Balmford, L. G. Barbeau, G. F. Barnardo, F. O. Bell, A. F. M. Berkeley, George Bill, J. J. Brennan, Alexander Brownlie (with distinction), S. C. Brush, F. S. Butler, A. N. S. Carmichael, C. W. Chapman, H. A. Clark, J. O. Coker, J. W. Compton, R. A. Corson, J. F. Crombie, H. W. Crosse, J. W. Dawson, E. C. Dobie, R. H. Drennan, Alfred Duke (M.A.), C. C. Easterbrook, M.A. (with distinction), Samuel Edgerley (M.A.), A. M. Elliot, A. C. Elliott, Michael Emin, J. L. Fenton (B.A.), William Fletcher, W. R. Forbes, William Forsyth, J. R. Foster, Charles Frier, William Gordon, W. H. Gregory, W. C. Grosvenor (M.A.), F. E. Gunter, T. C. Guthrie, A. A. S. Harriss, A. H. Hopkins, E. C. W. Hughes-Games, R. H. Humphreys, Alexander Ingram, O. H. Isard, P. P. H. Jagannadham (B.A.), R. J. Johnston (with distinction), George Johnston, H. B. Jones, H. B. Knox, Robert Knox, R. M. Leslie, M.A., B.Sc. (with distinction), J. R. Liddell, E. S. Littlejohn, Donald Macaulay, M.A. (with distinction), Alexander M'Ewan, Robert Macfarlane, T. N. Macgowan, F. W. Mackay, A. J. Mackintosh, Duncan M'Neil, H. B. Mapleton (B.A.), Charles Martin, T. M. Martin, C. E. Maude (B.A.), J. S. Maynard, A. J. Meikle, James Miller, P. St C. More, D. S. Morrison (M.A.), G. C. Munnik, C. R. Nair, E. M. Nicholl, John Nicholson, Alexander Van Niekerk, Samuel Oddie, G. G. Osborn, T. L. Parry, D. W. T. Paterson, C. R. Pearce, William Peart-Thomas, R. O. Petrie (M.A.), James Philip, F. L. Pochin, J. C. Potter, G. H. Prance, W. G. Putnam, Stanley Riseley, Allan Robertson, J. B. Scott, R. W. L. Scott, Raoul



Scheult, C. D. Sinitopoulos, H. J. Slane, A. S. Smith, J. G. Smith, P. C. C. Smith, W. J. J. Stewart, T. N. Stuart, C. A. Sturrock (M.A.), James Sutherland, John Sutherland, W. S. Syme, George Templeton, Bernard Thomas, J. T. Thyne, Walter Tibbits, H. S. Walker, T. D. Walker, W. J. Walker, B.A. (with distinction), R. B. Wallace, J. M. Walls, A. E. Watson, E. J. Weightman, Victor Werdmüller, Harry Whittome, J. D. Williams, R. M. Williams, G. R. Wilson, W. H. Wilson.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the July sittings of the examiners in Glasgow, the following 27 out of 40 candidates have passed the first professional examination for the triple qualification:—Stella Irene F. Greaves, Sydney; John Garroway, Glasgow; Haydn Brown, Lincoln; Fras. Evered, Curry-Revell; Geo. J. Stones, Birkenhead; Albert Edward Lewis, Swansea; Agnes M. Williams, London; John Macintosh, Glasgow; Wm. C. Alexander, Glasgow; David Stephen, County Down; John Livingston, Glasgow; Albert E. Downey, Glasgow; John P. Roberts, Ruthin; Martha M. Stewart, Newry; James Munro, Stornoway; Wm. C. Paterson, Wetherby; George William Beesley, Liverpool; George Gibson, Tyrone; Herbert E. C. Corkery, Bombay; Reginald H. Wright, Broom Edge, Lymm; John W. Gibson, Moneymore; Harold T. Hollings, Yorkshire; Samuel Tulley, Stranraer; Frederick W. Barton, Lincolnshire; George F. Hulme, Huntingdon; Robert R. Stitt, Birkenhead; and Kristualal Datta, Calcutta. *Second Professional Examination*.—Of 60 candidates the following 34 passed:—Rosa E. Bale, Barnstaple; Mary C. Murdoch, Elgin; Kate E. Pepper, London; Edith Lucy Nicholas, London; Charles H. Hibbert, Marple; Walter H. Anderson, Burton-on-Trent; Irvin Baldwin, Bradford; Alexander W. Forrester, Malone; Richard H. Darwent, Barnard Castle; Frank C. Godfrey, Gibraltar; Charles H. Andrews, Cape Town; Hope Wellis, Poona, India; Jogendranuth Banergie, Bengal; William A. Collier, Dunkineely; Frederick William Barton, Lincolnshire; William A. Gosford, Hampshire; Patrick O'Gorman, Ballybawn; Robert Murdoch, Old Cumnock; Frank L. Taylor, Cape of Good Hope; Thomas E. Magner, Ovens, Co. Cork; James Philip, Glasgow; Edmund R. Pollard, Burnley; Richard A. Mate, Salop; Charles E. Whiteher, London; William C. Croxford, Brentford; Edwin Callender, Haydon Bridge; Walter T. Rogers, Gedney, Lincolnshire; Alfred Leigh Chignell, Wingham, Kent; Robert A. Potterton, Co. Meath; Morris Jones, Merioneth; Alfred H. Peters, Calcutta; William Morris, Pontypridd; Haydn Brown, Lincoln; and James Wardrop, Glasgow. *Final Examination*.—Of 39 candidates the following 11 passed, and were admitted licentiates of the three co-operating colleges:—Frederic Rawlings, Reddish, Lancashire; Pierce M. Dwyer, Dublin; James Craig, Glasgow; Jane B. Henderson, Portobello; William J. Howarth, Pendleton; Lillias Hamilton, Kensington; John Mackenzie, Falkirk; Peter A. Docherty, Comrie; Michael O'Shaughnessy, Ardagh, Limerick; William H. Carlisle, Belfast; and John P. Lyons, Clare Castle, Co. Clare.

### LIST of the successful Candidates at the recent Competitive Examination for Commissions in the Medical Staff of Her Majesty's Army:—

| Order of Merit. | Names.                      | Total Number of Marks. | Order of Merit. | Names.                      | Total Number of Marks. |
|-----------------|-----------------------------|------------------------|-----------------|-----------------------------|------------------------|
| 1.              | Powell, E. E., . . .        | 3245                   | 11.             | Ryan, R. P., . . .          | 2925                   |
| 2.              | Beach, T. B., . . .         | 3240                   | 12.             | Graham, W. Ap. S. J., . . . | 2920                   |
| 3.              | Williams, E. M'K., . . .    | 3225                   | 13.             | Shanahan, D. D., . . .      | 2895                   |
| 4.              | Jennings, J. W., . . .      | 3190                   | 14.             | Dickson, H. E. B., . . .    | 2890                   |
| 5.              | Carter, J. E., . . .        | 3105                   | { 15.           | Buggy, L., . . .            | 2880                   |
| 6.              | Dowse, H. E., . . .         | 3090                   | { 16.           | Pearse, A., . . .           | 2880                   |
| 7.              | Connor, J. C., . . .        | 3025                   | 17.             | Mason, H. D., . . .         | 2875                   |
| 8.              | Hardy, F. W., . . .         | 2990                   | 18.             | Clapham, J. T., . . .       | 2855                   |
| 9.              | Healey, C. W. R., . . .     | 2945                   | 19.             | D'Alton, C., . . .          | 2850                   |
| 10.             | Whitestone, C. W. H., . . . | 2940                   | 20.             | Tate, G. W., . . .          | 2825                   |

BRITISH MEDICAL SERVICE.—List of Surgeons on Probation of the Medical Staff of the British Army who were successful at both the London and Netley Examinations, 31st July 1890:—

| No. | Name.                | Combined Marks. | No. | Name.                | Combined Marks. |
|-----|----------------------|-----------------|-----|----------------------|-----------------|
| 1.  | Smithson, A. E.,     | 5302            | 6.  | Jackson, R. W. H.,   | 5008            |
| 2.  | Whiston, P. H.,      | 5249            | 7.  | Mawhinney, R. J. W., | 4810            |
| 3.  | McLoughlin, G. S.,   | 5243            | 8.  | Bray, G. A. T.,      | 4800            |
| 4.  | Parry, H. J.,        | 5117            | 9.  | Forde, B.,           | 4785            |
| 5.  | Beveridge, W. W. O., | 5113            | 10. | Ferguson, J. D.,     | 4683            |

Fred. Smith, 2803 (*Netley marks only.*)

ARISTOL.—Though an agent of undoubted value, the peculiar odour of iodoform, which no added substance has yet been able wholly to disguise, and its occasional toxic properties, have rendered it desirable that some less objectionable substitute should be discovered to replace it. Apparently iodol and sozoiodol have only been partially successful in this respect, for a new compound of iodine and thymol called aristol has been suggested. This is a brick-red amorphous powder, with a faint though not unpleasant smell. It is insoluble in water and glycerine, sparingly in alcohol, easily in ether and chloroform, readily in fatty oils. The solution must be made in the cold, by stirring, as the use of heat causes decomposition. It is necessary for the same reason to keep it from light in opaque bottles. It may be employed simply as a powder, and so used Brocq claims to have obtained cicatrization in several instances of epithelioma. Various observers report favourably of its beneficial action in lupus and psoriasis. In the former as a 10 per cent. ointment made with vaseline; in the latter, similarly employed, and also in the preferable shape of a 10 per cent. solution in flexible collodion. In tinea tonsurans capitis it has likewise been tried, and we have made a considerable number of observations with it in this vexatious ailment, but the results are not yet sufficiently decisive to warrant an authoritative opinion: they will be published in due course. The remedy is at present on its trial. We are disposed to regard it with favour, all the more as it comes from the firm of Friedr. Bayer & Co., Elberfeld, the producers of sulphonal and phenacetin.

SWEAT BANDS OF HATS may contain over 28 per cent. of fatty acids, which in summer may penetrate into the forehead, cause inflammation, and erode deeply into the skin. Rub with burnt magnesia every little while, so as to leave a small film on the band; wipe it off with a cloth before applying again.—*Prager Med. Wochensh.*, No. 39, 1889.

AN EXCELLENT EXAMPLE.—The Royal College of Physicians of London has an excellent system of fire extinguishing apparatus connected to the constant pressure water mains in Pall Mall, enabling several jets to be thrown into any part of the building in case of an outbreak of fire, or, indeed, to attack any fire occurring in their neighbours' premises. The porters of the College are periodically drilled by one of Messrs Merryweather & Sons' fire inspectors, and after each drill the Secretary receives a printed report as to the condition of the fire appliances and the efficiency or otherwise of those taking part in the drill.

## CORRESPONDENCE.

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(To the Editor of the *Edinburgh Medical Journal*.)

EDINBURGH, 25th July 1890.

SIR,—Statements have of late appeared in the Medical papers specifically asserting that the qualifications and titles of the Scottish Corporations are granted on insufficient, and in some cases, without examination. Professor Struthers has already pointed out that a similar allegation referring to the University of Aberdeen is absolutely false. It is not less so in reference to the Corporations. The Examinations for the Licence of the three Corporations are managed by a committee of representatives who are not Examiners. The Board of Examiners is drawn from the Schools of Edinburgh and Glasgow, is composed of the men who are most distinguished in the various departments, and is at the same time the largest Board of Examiners in the three Kingdoms. There has thus been secured not only a high standard which is common enough, but also a discouragement of special cramming, and a justice and uniformity which are not easily attained.

If the value of the Examinations be estimated by the average number of rejections, it will be seen by the published returns that they bear favourable comparison with all others. At the last sederunt the rejections were over 60 per cent., larger than usual by 5 or 6 per cent.

It may frankly be admitted that some of these rejections arise from the fact that statements such as those referred to induce a certain number of unprepared men from other schools to make their appearance for Examination here. These men being relegated to their studies, occasionally (to their great benefit, but apparently to the mortification of the author of these statements) continue their studies in the Scottish Schools, and subsequently pass.

In regard to higher titles, the Fellowship of the Royal College of Surgeons of Edinburgh is granted very rarely, perhaps once in one or two years, on the recommendation of the Council and by ballot of the College, "to men who have highly distinguished themselves by original investigations, and possess registrable surgical qualifications of a sufficiently high order" (see Laws, p. 20). This is the case with most similar titles. But with this exception, the Fellowship is granted only after Examination, the stringency of which may be judged by the fact that at the last Examinations out of twenty-two candidates twelve were rejected.

The recent action of certain provincial hospital boards has plainly been based on a narrow spirit of trades-unionism, and not upon a just estimate of the value of the higher titles granted by the Scottish Colleges.—I am, Sir, your obedient servant,

JOHN DUNCAN, President R.C.S. Ed.

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## Part First.

### ORIGINAL COMMUNICATIONS.

#### I.—ON THE PRESERVATION OF BODIES FOR DISSECTION.

By JOHN STRUTHERS, M.D., F.R.C.S. Edin., Emeritus Professor of Anatomy,  
Aberdeen University.

I HAVE shown my methods to various teachers of Anatomy in this country and on the Continent who have visited my Anatomical School here, and it has been suggested to me to make them known as likely to prove useful in the anatomical schools generally. Over many years I have tried various methods, but will confine my remarks mainly to noticing the one which experience led me to settle on as the best, and which I have employed now for a considerable time.

A. *Internally*.—The use of the spirit and corrosive sublimate injection we all knew in Edinburgh many years ago, and I believe we owed it to the late Mr A. B. Stirling, the well-known and able Assistant-Curator of the Anatomical Museum of the University under the late Professor Goodsir. Its preservative power is perfect, but the use of spirit as the only fluid leads to early drying on the dissecting table, and much trouble was required to keep such parts as the hands, feet, and scalp, and, indeed, the body generally, from drying before they could be fully dissected. I correct this by adding glycerine. The proportions I use are spirit (methylated spirit) two-thirds, glycerine one-third. For convenience we keep the fluid made up in the common half-gallon bottles, and to a half-gallon of the fluid is added 160 grains of the corrosive sublimate, the *Hydrargyri perchloridum* of the *British Pharmacopœia*. More than that quantity of the perchloride if the body has begun to decompose; twice as much if decomposition is advanced. The perchloride should first be dissolved by rubbing it well in a mortar in a little of the spirit.

On an average we throw in two gallons; for a thin female subject one gallon may suffice; an old subject takes in less than a young one. The skin begins to show white mottling, then the mottlings become confluent, giving a uniformly white skin. The injection is then sufficient. We always inject by gravitation, using the hand-syringe only if the body has been much cut up in post-



mortem examination. The above-mentioned quantity of the fluid will have passed in gently by gravitation in an hour and a half—at first rapidly, then more slowly. Without the glycerine it passes in more rapidly, in about twenty minutes. If the hand-syringe is used, a considerable pause should be made after the first gallon. In old subjects the use of the hand-syringe is apt to cause rupture of the arteries of the abdomen.

Some of the fluid should be injected into the peritoneal cavity (about two pints) by puncture at the umbilicus; some into the nasal cavities and mouth; some into the bladder, after any urine has been drawn off; and some into the rectum, which should previously be washed out.

I have always, both in Edinburgh and in this School, injected from the femoral artery, at a little below Scarpa's triangle, one pipe up, another down, both fed at the same time by the gravitation tubes. Injecting from the arch of the aorta ruins the dissection of an important region of the thorax. I have had every injection pipe made with a stop-cock; that is much more convenient than having the stop-cocks separable.

Some of the fluid may be thrown up into the veins also, either at the femoral cut or by the great saphena in front of the ankle. It goes up into the portal system and other abdominal veins, and to the right heart and thoracic system, and if pushed a little it will overcome the valves at the root of the neck and pass to the head. This makes the injection more thorough, but generally we do not require to inject the fluid into the veins. I have found that injection of the veins alone will do, along with the external application to be mentioned next. We did that for a time when the injection was of glycerine and carbolic acid, to avoid blocking the arteries for the red injection, but with the fluid we use there is no occasion for avoiding injection by the arteries. Washing out the veins before throwing in the fluid may be easily done in an opened subject, from the ankle, wrist, and root of the neck on one side, and is worth doing; but in the case of entire bodies we have not generally done so for ordinary dissecting-room purposes.

*B. Externally.*—As to the above method, it may be remarked that there is nothing in it very new; I have merely expressed my experience in the employment and in the proportions of materials with the use of which many must now be more or less familiar; but the following method by external application was, I believe, new when I first employed it. I use carbolic acid and glycerine, in the proportions of 1 of carbolic to 8 of glycerine; if decomposition has begun, 1 to 6, or if decomposition is advanced even 1 to 4; but 1 part to 8 is our usual proportion. We keep the fluid in quantity made up in that proportion. Take a large brush, as thick as the wrist, and paint the body over with the fluid. For a convenient name I call the process "painting." Paint it on as thick as it will take without running off. Using the common cheap carbolic acid and glycerine, the body is black for the moment

but in a little time the body is white again. Repeat this process three or four times, say twice the first day, and the same next day, and the body may be regarded as cured.

This process alone, if repeated often enough, will preserve at least an opened body, but we always inject as well. The affinity of glycerine for the serum of the tissues makes it go in rapidly, carrying the carbolic with it. The perfect preservation of the skin is a special advantage of this method. If the cuticle had not already been loosened by decomposition, the skin of our subjects, months afterwards, is natural, with the cuticle firm. If the cuticle is already loose it is best to remove it. The painting of the front of the body may be done when the injection is going on by gravitation—the sacrum, shoulders, and head resting on small blocks—then the body must be turned for the painting of the back, and the same repeated next day. If decomposition is far advanced it may be arrested and the body restored by the above injection and external application being used in the strong proportions. Further, the fluid for external use may be injected hypodermically, after pricking with a needle to allow of the escape of the gases of decomposition. Bodies that would formerly have been regarded as unfit for use may thus be restored so as to be useful subjects for dissection.

C. *Storing*.—After the bodies are fully prepared I keep them in slate troughs, 6 feet 6 inches in length, inside. These I had made when spirit was the only fluid used, and therefore very close fitting; no “check” or reception groove, but simply the flat lid fitting accurately every way the edges of the trough, assisted with a very little antiseptic grease. The lid and the edges of the trough are carefully ground level. My first troughs were narrow, made to hold two subjects, one above the other; then I got them of double breadth, to hold four—two below and two above. There is no necessity for having the bodies immersed in a fluid, as I have seen in some schools. I began with having some spirit in the bottom, so as to have an atmosphere of spirit in the trough, but that is unnecessary—indeed I would say not beneficial; nor is it necessary to have a cloth round the bodies saturated with the fluid. Nothing is needed. But the bodies should not press on each other. I have a thin frame of wooden spars in the bottom of the trough for the lowest bodies to rest on, so as to keep them out of any fluid that may drop down, and a middle frame of spars, resting on a foot at each corner of the trough, for the upper bodies to rest on. These wooden frames, as well as the interior surfaces of the trough, should be carefully carbolized. The lid of the troughs is of thin slate, half-inch thick, with two iron handles, so that a man can easily lift it up. No machinery is necessary. When raised the lid rests on a wooden support, and stands reclining against the wall of the room. In this way chipping of the edges of the lid is avoided.

The kind of trough I would recommend, if the preserving-room is large enough, is one to hold only two subjects, side by side.

They are thus more easily examined and selected when wanted. But with the glycerine process above described a slate trough is not absolutely necessary. I think a well-fitted wooden chest would suffice, at least if lined with zinc. The slate troughs are expensive, and require a great deal of care in the fitting up; the lids have to be ground thin and level at the slate-works, and the mouth of the trough has to be ground quite level after the fitting up. My larger preserved dissections and moist preparations of comparative anatomy are kept in slate troughs about half the size of those above described, each enclosed in a wooden chest besides. For such dissections, too large for glass jars, I would recommend slate troughs always to be used.

After about a week the subject should be turned in the trough to counteract gravitation, and after another week turned again on the back. If the number of the subject in the teacher's book is chalked outside the trough, he can at once send for a subject of the sex and condition he wishes. The subject improves by being kept for, say, a couple of weeks before being dissected. The fluids have had time to act on the tissues. Months afterwards, the bodies preserved as above described are quite fresh, and would, indeed, keep so for any length of time.

D. *Dissection*.—During dissection the exposed parts of all bodies, whether preserved or not, and in whatever way preserved, will tend to dry. My way of preventing or diminishing this is to have a large waterproof cloth for each dissecting-table, large enough to overlap the table, and when the rooms close for the day the servant goes round and covers each body or table with the cloth, removing it in the morning. The trouble is not great compared with the advantage. The cloth may cover the whole table where the separated parts lie, or, when the body is still entire, the cloth may be tucked in at the sides of the body.

If the cuticle had been detached before the preserving process could be applied, the part should be wrapped in a glycerined cloth (glycerine and water equal parts), and that wrapped in a waterproof bandage until the skin is dissected off. We generally dissect the back first, and then turn the body permanently. Before the body is thus turned the dissected surfaces should be carefully painted with the glycerine-carbolic fluid, otherwise they will be found to mould and cause unpleasant smell in the rooms. That is because the preservative fluid had been removed on the dissected surfaces by the sponging with water in the course of the dissection.

The brain may be allowed to remain till it is convenient for the dissector to take it. If the body has been recent when first preserved, the brain will have been firmed by the above process. No doubt, however, the best way to deal with the brain, if the body is recent, is to remove it soon and prepare it with spirit, and then by the glycerine and carbolic process I have elsewhere described. My custom has been to take out a number of the brains as soon as

the preservative injection is completed, to prepare them in the way mentioned, and give them to the dissectors of the head and neck at the time the lectures on the brain are going on; and at the same time, to facilitate the practical study of the brain in the School, to place out in the rooms, simply under glass shades, a series of views of the convolutions and interior parts prepared by that process. The topography of the brain is now a very important study, and I find this method much more useful than the old method of each pair of dissectors doing their best with the brain at the time they happen to be dissecting the head. Brains so prepared lie at all times on the museum shelves and tables, moist, simply under glass shades, a thing impossible when only spirit was used. The series of the brains of the various mammalia, prepared in this way, may thus always lie on the museum tables for objective study.

I need not refer but shortly to the methods I have abandoned. I recollect the old pickling with salt in my student days; then the chloride of zinc, bleaching and corrugating everything; then the arsenical injection; and, more recently, the glycerine and carbolic injection. Some eighteen years ago the latter was much spoken of in the London Schools—the bodies “packed,” as it was called, with the fluid, injected by the arteries. I found this process prevent the subsequent red injection getting fully in. I then tried it by the veins only, along with my external process; and the body may be so preserved, but the carbolic acid acts unpleasantly on the blood in the veins, rendering it like soft mud. That injection also discolours the muscles considerably, an effect which I do not think was owing to the impurity of the carbolic acid and glycerine used. I gave up the use of the carbolic acid and glycerine injection, much preferring the injection above described. In 1879 the German Government bought, in order to make public, from Wickersheimer of the Berlin Museum, a secret process, and much was said about it at the time as an important discovery. It contained alum, cooking salt, saltpetre, potash, and arsenious acid, in certain proportions (207 grains in all), dissolved in 3000 parts of *water*, and to 10 litres of this were added 4 litres of glycerine and 1 litre of methylated spirit. I was credulous enough to try it, and lost a good subject by it. I saw Wickersheimer's preparations, and there appeared to be nothing to learn from them. The bodies I saw in April last in the preserving-rooms of the Paris Anatomical School appeared to be very well prepared, but I am not aware of the process employed. For years back announcements have from time to time appeared in the journals of new agents for preservation, and nothing more heard of them; but no process that I have tried or seen has given so satisfactory results as the combined one above described, though it is possible and likely enough that it, like everything else, may be improved on in the progress of science.

The red injection may be thrown in a day or two after the preparation, or later, according to convenience. At first I waited,



in order to add, if necessary, a further quantity of the preservative fluid, but that is not necessary. We used in Edinburgh to employ the simple tallow and vermilion injection, but it requires the body to be heated, and in old subjects the arteries of the extreme parts were apt not to be filled, and those of the abdomen not unfrequently burst. I now use only the cold paint injection for dissecting-room purposes. I gave up the plaster injection on account of its brittleness and unsuitability for dried museum preparations, though it runs well.

For ordinary dissecting-room purposes I use the brown glycerine and the impure carbolic acid, both being inexpensive. For brain preparation I use the cheap clear glycerine; in my histological laboratory only the purest kind, Price's best glycerine, is used. An account of my method of preparing the brain, and of my moist method for museum specimens and moist method for dissections to be kept, is given in the Proceedings of the Anatomical Society, *Journal of Anatomy and Physiology*, vol. xxii., 1888.

I must not omit to mention that, in the numerous trials after which I arrived at the above conclusions, I have been carefully assisted by Mr Robert Gibb, who has been my devoted and faithful attendant in the Anatomical School here for the last seventeen years. We have together made many experiments with many kinds of injecting materials, and in varied proportions. I made a note of each injection, and noted afterwards the result in the course of the dissection, always keeping in mind the age and cause of death. Very fat subjects are not so suitable for long preservation. Before preserving was adopted, the phthisis bodies decayed rapidly, but, at least since I used the above-described method, that has not appeared. Dropsical bodies are unsatisfactory, mainly because the cuticle is apt to have loosened; the serum should be removed as far as possible by punctures and pressing; on the limbs firm bandaging downwards is the most effective way of making the pressure. But I may say we have no failures with bodies of any kind.

It may be asked, Why not use the perchloride of mercury instead of the carbolic acid in the painting process? We tried it, and our impression is that it is not so effective in that way as the carbolic acid, but the impression is not founded on definite comparative experiments. Should it yet be found to be as effective, it is more easily applied, and is inodorous. Specimens mounted in the museum prepared by the moist method described, though the method is convenient and inexpensive, have a dark appearance, and I am not certain whether that is not owing to the effect of light on the carbolic acid. It remains to be seen whether that would be less by using the perchloride of mercury instead of the carbolic acid.

It would not be easy to express fully the benefits that have resulted from the preservation of bodies for dissection. In my student days and earlier teaching time in Edinburgh, the dissecting-room, as in other schools, smelt like the post-mortem room,

the bodies decomposing, with the accompaniment, in the summer session, of blue-bottle flies and maggots; the students sometimes ill, and dissection wounds dangerous. All that has passed away. Further, the supply has been increased by our being able to preserve the bodies from the holiday months, and we can now start the students at once to their dissections at the opening of the session; and more than that, the parts continue fresh to the end, so that the student is able to get more out of his dissection. But for these improvements, the diminished supply of bodies, inevitably following on the public sanitary laws of recent years, going steadily on—*e.g.*, the almost disappearance of typhus fever—would have left the anatomical schools in a very embarrassing position, bad enough as it already was. It is, however, not merely where the supply may be scanty that the preserving process is useful. All bodies intended for dissection or for operations should be prepared. The cleanliness and satisfaction attending dissection are so much greater.

We hear sometimes of large sums of money being paid for “embalming” a body—hundreds of pounds! No so-called embalming process could surpass the results of the method above described, and the cost is very small. Any one can add aromatics. Nor need the viscera be removed. The body remains perfectly fresh, the features unaltered, and I do not doubt would remain so and unshrunk for years, placed in a coffin or other receptacle, or with an envelope sufficient to prevent evaporation. The process may be had recourse to in the case of bodies to be sent for burial from distant parts. The body would have to be placed on a table, and the hand-syringe used; on the unshaved head it would be advisable to use spirit and perchloride of mercury alone, and on the rest of the body clear glycerine and the perchloride instead of the carbolic, for the sake of appearances and to avoid the smell of the carbolic.

It has occurred to me that, from its remarkable ingoing power, glycerine might sometimes be used locally, as on the skin or gum, as a vehicle to carry inwards any therapeutic agent duly dissolved in it.

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## II.—CROUPOUS PNEUMONIA IN CHILDREN.

By JOHN PLAYFAIR, M.B., F.R.C.P. Ed.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2nd July 1890.*)

CROUPOUS PNEUMONIA in children is, in its pathological results, and in some of its signs and symptoms, the same affection as seen in the adult. In the child, however, it has its interesting peculiarities. It is my purpose to draw attention to a few of these, and at the same time to point out some of the general features of the disease as more prominently manifested in the child.

| No. | Name.    | Age. | Sex. | Lung, and region of Lung affected.  | Previous Illnesses.                                     | Date of Onset.   | Date of Termination. | Result.    | Remarks.                                                                                                                                                                                                                                                                                                                                         |
|-----|----------|------|------|-------------------------------------|---------------------------------------------------------|------------------|----------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | J. H.    | 1½   | M.   | Left Apex.                          | Rickets.                                                | 18th March 1884. | (?)                  | Improved.  | Head symptoms at first. Temperature fell to 98° on the 17th March. Was dismissed 24th March with slight dulness remaining at left apex. Re-admitted to Ward I., April 3rd. Attack began with vomiting and headache. Temperature normal on 3rd April. Was admitted as suffering from typhoid fever. Dulness at right apex discovered on 22nd May. |
| 2   | M. M.    | 6    | F.   | Right apex, and possibly left also. | Measles, scarlet fever, and whooping-cough. None noted. | 27th March 1884. | 8th April 1884.      | Recovered. | Possibly some pleurisy at left base also. Temperature fell to normal on 2nd June.                                                                                                                                                                                                                                                                |
| 3   | J. G.    | 9    | F.   | Right apex.                         | Rickets.                                                | 16th May 1885.   | 27th May 1885.       | Recovered. | Admitted June 11th for severe attack of chorea. Temperature rose suddenly to 102·6° on 22nd June. No chest physical signs till June 25th. By July 3rd the right apex was free from signs of condensation. Temperature fell to subnormal, and remained so on 29th June.                                                                           |
| 4   | M. A.    | 8    | F.   | Left base.                          | Rickets.                                                | 28th May 1885.   | 15th June 1885.      | Recovered. | Illness began with diarrhoea and vomiting, and great abdominal pain. Temperature fell to normal on 9th April.                                                                                                                                                                                                                                    |
| 5   | E. C. D. | 9    | F.   | Right apex.                         | Measles, chorea.                                        | 22nd June 1885.  | 3rd July 1885.       | Recovered. | Slight herpes on nostrils. Temperature fell to normal 31st July.                                                                                                                                                                                                                                                                                 |
| 6   | K. H.    | 6    | F.   | Left base.                          | None.                                                   | 1st April 1886.  | 20th April 1886.     | Recovered. |                                                                                                                                                                                                                                                                                                                                                  |
| 7   | M. B.    | 6    | F.   | Right base.                         | Measles, scarlet fever, and whooping-cough.             | 23rd July 1886.  | 4th August 1886.     | Recovered. |                                                                                                                                                                                                                                                                                                                                                  |

|    |          |    |    |                                                      |                                          |                 |                  |            |                                                                                                                                                                                                                                                                                                                                         |
|----|----------|----|----|------------------------------------------------------|------------------------------------------|-----------------|------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | W. M'C.  | 7  | M. | Double, both bases.                                  | Whooping-cough.                          | 19th Jan. 1887. | 20th Feb. 1887.  | Recovered. | Illness began with headache and vomiting; had noisy delirium. Temperature rose to 107°·4 on evening of 31st. Fell next morning to 98°. Was irregular for a day or two, and finally fell to subnormal on 5th Feb. Illness began suddenly with headache and vomiting. Herpetic eruption on upper lip. Temperature fell to normal on 18th. |
| 9  | E. L.    | 8  | F. | Right base.                                          | Measles and whooping-cough.              | 9th April 1887. | 22nd April 1887. | Recovered. | Illness began with vomiting, purging, and headache. Temperature very irregular, did not fall to normal till 29th. Patient was occasionally only semi-conscious. Some pleurisy on right side.                                                                                                                                            |
| 10 | J. W. A. | 4  | F. | Right, whole of, though seems to have begun at base. | None.                                    | 10th May 1887.  | 6th June 1887.   | Recovered. | Began with vomiting and purging. By the 7th whole right lung had become consolidated, and friction heard at base. On the 13th a decided fall of temperature. Physical signs did not improve, and temperature never became normal. On the 24th July evident signs of fluid in chest.                                                     |
| 11 | I. S.    | 2  | M. | Right whole lung. Began at apex.                     | None.                                    | 1st July 1887.  | 4th Sept. 1887.  | Recovered. | Illness began suddenly during night with vomiting. Slight pleurisy at left base also.                                                                                                                                                                                                                                                   |
| 12 | M. M'C.  | 9  | F. | Left lower lobe.                                     | Measles and bronchitis, several attacks. | 27th Oct. 1887. | 12th Nov. 1887.  | Recovered. | High fever and delirium from the commencement of illness till 10th Jan., when temperature fell suddenly to 99°. Some dry pleurisy also developed on right side.                                                                                                                                                                         |
| 13 | J. M.    | 10 | M. | Right lower lobe.                                    | Whooping-cough and measles.              | 5th Jan. 1888.  | 30th Jan. 1888.  | Recovered. |                                                                                                                                                                                                                                                                                                                                         |



| No. | Name.   | Age. | Sex. | Lung, and region of Lung affected. | Previous Illnesses.                       | Date of Onset.  | Date of Termination. | Result.    | Remarks.                                                                                                                                                                                                 |
|-----|---------|------|------|------------------------------------|-------------------------------------------|-----------------|----------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14  | E. S.   | 12   | F.   | Left lower lobe.                   | Measles.                                  | 5th April 1888. | 16th April 1888.     | Recovered. | High fever, which fell to 99° on 11th. Had bloody expectoration. Slight bronchial catarrh in right lung.                                                                                                 |
| 15  | C. K.   | (?)  | M.   | Right lower lobe and left apex.    | Unknown.                                  | 7th May 1888.   | 22nd May.            | Recovered. | Was three days in hospital with high fever and quiet breathing before physical signs developed. Temperature fell suddenly on May 11th. Both lungs had practically cleared up by 16th May.                |
| 16  | R. M.   | 7    | M.   | Right lower lobe.                  | Unknown.                                  | 12th May 1888.  | 23rd May 1888.       | Recovered. | Temperature fell to normal on 15th May. Redux crepitation well marked.                                                                                                                                   |
| 17  | A. R.   | 2½   | F.   | Right lower lobe.                  | Measles, whooping-cough, and chicken-pox. | 1st June 1888.  | 10th June 1888.      | Recovered. | Temperature fell to normal on 6th June. Some dry pleurisy on right side also.                                                                                                                            |
| 18  | J. M'H. | 3    | M.   | Left lower two-thirds.             | None.                                     | 18th July 1888. | 15th Aug. 1888.      | Recovered. | On admission on July 21st thought to be suffering from peritonitis; had vomiting, abdominal pain, and distension. Chest noted as normal. On July 25th signs of consolidation of left lung first noticed. |
| 19  | D. G.   | 5½   | M.   | Left lower lobe.                   | None.                                     | 20th July 1888. | 2nd Aug.             | Recovered. | Bad family history. Some pleuritic effusion at left base also. Had also a distinct mitral systolic murmur. Temperature fell suddenly on 24th July.                                                       |

|    |         |    |    |                                                                                      |                             |                           |                               |            |                                                                                                                                                                                                                                                                                                                |
|----|---------|----|----|--------------------------------------------------------------------------------------|-----------------------------|---------------------------|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20 | J. S.   | 8  | M. | Right upper lobe.<br>Signs of congestion at left apex also.                          | Whooping-cough.             | 19th Sept. 1888.          | 30th Sept. 1888.              | Recovered. | Illness began suddenly with vomiting. Fever reached 106° on 5th day. Fell to subnormal on 9th day. Pneumonic physical signs did not develop till 4th day.                                                                                                                                                      |
| 21 | G. S.   | 6  | M. | Double. Nearly the whole of left lung and base of right. Began at base of left lung. | Measles and whooping-cough. | 14th Dec. 1888.           | 21st Dec. 1888.               | Died.      | Illness began with headache, vomiting, and drowsiness. Herpes labialis. At post-mortem a gangrenous cavity found at base of left lung.                                                                                                                                                                         |
| 22 | A. S.   | 4  | M. | Left apex.                                                                           | Synovitis of left knee.     | 25th Dec. 1888.           | 8th Jan. 1889.                | Recovered. | Temperature fell to normal on 2nd Jan.                                                                                                                                                                                                                                                                         |
| 23 | R. B.   | 6  | M. | Right base.                                                                          | Measles and pneumonia.      | 23rd Dec. 1888.           | 12th Jan. 1889.               | Recovered. | Temperature normal on 5th Jan. Some catarrh of left lung. Vomiting a prominent symptom—continued for some days.                                                                                                                                                                                                |
| 24 | C. M'P. | 6  | F. | Left base.                                                                           | Measles.                    | 1st Jan. 1889.            | 15th Jan. 1889.               | Recovered. | Temperature normal on the 10th Jan.                                                                                                                                                                                                                                                                            |
| 25 | J. B.   | 2½ | F. | Right lower lobe.<br>Right base.                                                     | None.                       | 20th Jan. 18th Feb. 1889. | 30th Jan. 27th February 1889. | Recovered. | Had 2 distinct attacks. In first attack temperature fell on 30th, and by that time dulness and tub, breathing had quite disappeared. Temperature again rose suddenly on morning of 18th Feb. to 103°·6. Temperature fell to normal on 24th Feb. By 27th Feb. chest had cleared. Took chicken-pox on 4th March. |
| 26 | G. A.   | 13 | F. | Right base.                                                                          | Pleurisy and measles.       | 10th Feb. 1889.           | 17th Feb. 1889.               | Recovered. | Temperature typical. Fell suddenly to 97° on 17th (8th day). Very few physical signs throughout. By the 17th chest was perfectly normal. Herpes labialis.                                                                                                                                                      |

| No. | Name. | Age. | Sex. | Lung, and region of Lung affected.             | Previous Illnesses.                         | Date of Onset.   | Date of Termination.                 | Result.    | Remarks.                                                                                                                                                                                                                                                                  |
|-----|-------|------|------|------------------------------------------------|---------------------------------------------|------------------|--------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27  | J. M. | 5    | F.   | Right apex.                                    | Pleurisy.                                   | 1st March 1889.  | 15th March 1889.                     | Recovered. | Temperature characteristic, fell to subnormal on 6th March (6th day). Herpes labialis. Evidently some remains of an old pleurisy on right side. Right half of chest measured 9 in. Left half 9½. By 30th March chest was quite normal.                                    |
| 28  | C. K. | 4    | M.   | Right, whole lung. Began at base.              | Measles.                                    | 8th March 1889.  | Removed April 3rd, greatly improved. | Recovered. | Was ill a week before admission with abdominal tenderness and fever. By the 18th the whole lung was involved. Lung very slow in clearing up. Temperature jerky. Became normal on the 30th. On April 2nd, note on percussion over right lung was almost normal.            |
| 29  | E. C. | 6    | F.   | Left, lower ¾ths.                              | Pneumonia, measles, disease of bone of arm. | 22nd March 1889. | 8th April 1889.                      | Recovered. | Temperature fell to 100° on the 26th, and to subnormal on 29th. Dulness had begun to clear on the 28th. Herpes labialis.                                                                                                                                                  |
| 30  | H. M. | 1½   | M.   | Left, whole lung and left base. (Two attacks.) | None.                                       | 19th Nov. 1889.  | 7th Feb. 1890.                       | Died.      | Whole left lung consolidated by time of admission on 22nd Nov. By Dec. 10th left lung had cleared. Temperature began to rise again about the 18th. On the 21st temperature fell to subnormal. On evening of 22nd temperature rose again, and on 27th measles rash showed. |

With this design I bring before you a series of thirty cases of croupous pneumonia in children, all of which were treated in my ward in the Children's Hospital. To facilitate their consideration I have tabulated them, and I shall now offer some remarks on a few general points of interest brought out by this arrangement of the cases.

First, then, as to the ages at which the cases occurred. As is well known, croupous pneumonia is very uncommon under the age of 2. At that period of life pneumonia is common enough, but it is nearly always of the catarrhal variety. Above the age of 2 the two kinds of pneumonia seem to occur with about equal frequency, with a gradual tendency for croupous to become more common the nearer adult age is reached. Amongst the cases before us, Nos. 1 and 30 only were under the age of 2 years. Both of these were undoubted cases of croupous pneumonia, with typical fever and characteristic physical signs. No. 30 was exceptionally severe, and ended fatally, after a relapse followed by an attack of measles. Nineteen of the cases occurred between the ages of 18 months and 6 years; eleven between the ages of 7 and 12 years.

The sexes were about equally represented, fourteen being males and sixteen females.

The right lung was affected in sixteen of the cases, in eleven it was the left, and in three both lungs were attacked. As to the region of lung affected, in twenty-one it was the base, and in eight the apex. In one case the whole lung was consolidated by the time of admission, and it could not be determined where the disease began.

According to these observations the lower lobes of the lungs in children are much more frequently attacked than the upper, and this is in accordance with the statements of most writers on the subject. Henoch states that out of 124 cases of croupous pneumonia observed by him, ninety were basilar and thirty-one apical, and three in which the whole lung was affected. Goodhart also found that out of 120 of his cases, in eighty-five the lower lobes were attacked. In children the prognosis is little, if any, affected by the region of the lung inflamed. Cases of apical pneumonia make as good recoveries as those in which the lower lobes are the seat of the disease. Indeed, Eustace Smith affirms that "inflammation of this part (the apex) of the lung, in the large majority of cases runs in the child an especially short and favourable course."

In my two fatal cases, though in both the whole lung ultimately became affected, the disease began in each at the base. All the eight cases in which the apex was involved made good recoveries.

It was at one time supposed that apical pneumonia in children was specially associated with nervous symptoms. Rillet and Barthez described a pneumonia which they called "cerebral pneumonia," and in which they said the apex of the lung was nearly always attacked. Most authorities now hold that nervous symptoms in the croupous pneumonia of children are not associated with any



particular region of the lung. Nor does it seem any more true, as stated by Steiner, that otitis is a frequent accompaniment of pneumonia in children with cerebral symptoms.

As regards the cases under consideration, eleven are stated to have suffered from nervous symptoms, such as headache, delirium, herpes labialis, etc., but in only four of these was the upper lobe the seat of the disease.

Let me now take up another division of the table of cases, namely, the previous illnesses from which they suffered. Measles, I find, stands prominently out in this respect. Thirteen of the cases suffered from this disease at some period of their life anterior to their attack of pneumonia. Eight had had whooping-cough, while other diseases of childhood occurred so infrequently as not to require mention. Measles and whooping-cough are supposed frequent sources of lung affection in children, but it has also to be kept in mind that they are probably the most infectious. This may therefore well account for the fact that they are the most common previous illnesses to any particular disease, without in any way looking upon them as a cause of that disease.

Two of the columns in the table are headed Date of Onset and Date of Termination; and before proceeding further, some explanation of these terms is necessary. Obviously it is impossible to fix exactly the time when an attack of pneumonia begins and when it ends. What is meant by the date of onset is the day when the illness of the patient was first noticed, not the day of admission to hospital. The beginning of an attack of croupous pneumonia in a child is usually more sudden than in the adult, and is, as a rule, marked by some well-defined symptom, such as vomiting or purging, or headache with fever, but seldom by a rigor. The date of onset taken thus can therefore be fixed with tolerable certainty. By the date of termination is meant the day the lung was noticed free from all abnormal physical signs. Clearly this is a much more difficult period to determine, and therefore cannot be looked upon as so reliable as the former. It was fixed as carefully as possible, however, with a view to determine the duration of the attack.

Leaving out case 6, which ended as an empyema, and was many weeks before complete recovery took place, and case 30, which had two attacks of pneumonia, and afterwards took measles and ended fatally after a long illness, and not reckoning case 1, who was removed from hospital before he recovered, we get twenty-seven cases, with an average duration of nearly fifteen days.

I am uncertain how this compares with what takes place in adults, but I imagine it must take considerably longer for a pneumonic adult lung to lose all traces of consolidation.

Two of my little patients passed through their attacks and lost all pneumonic signs in seven days. Another case died on the seventh day. The most prolonged case occupied twenty-eight days,—this lengthened period being accounted for by a relapse

which took place about the sixteenth day, but ultimately the chest entirely cleared, and the patient made a good recovery.

Crises occurred in twenty-one of the cases, and in by far the greater number—namely, in thirteen of these—it took place on the fifth or sixth day. The earliest crisis was on the third day, the latest on the fifteenth. The case in which this late crisis occurred—No. 8—was one of hyperpyrexia, the temperature having reached  $107^{\circ}4$  on the eleventh day. From this, after a dose of 5 grains of antipyrin, it fell in a few hours to  $98^{\circ}$ , but rose to  $103^{\circ}$  the next evening, and was irregular for a day or two before the final and permanent fall took place on the fifteenth day of the illness. This patient also made an excellent recovery.

Of the nine cases in which crises did not occur, two ended fatally. The prolonged and gradually diminishing fever in the other cases appears to have been caused by complications of pleurisy or peritonitis, or by slight farther extensions of the pneumonic process. Henoch found that crises occurred in seventy-two out of eighty-two cases, and that that event occurred in the great majority of the cases (fifty-three) between the sixth and eighth days, rather later, therefore, than in most of the cases before us. "Very rarely," he says, "did the crisis take place on the third or fourth day, and in only one did it occur on the seventeenth day."

There is a practical point connected with the fever of the croupous pneumonia of children, and that is, that when the fall of temperature takes place, it is usually rapid and decided, and is frequently accompanied by great prostration and cardiac weakness. Alcoholic stimulants and heart tonics are, therefore, at this time often urgently called for, and usually give gratifying results, as children respond to such medicines much more promptly than do adults.

It is of some interest to determine the seasons of the year at which the cases occurred, and the table shows that with certainty. Seven are found to have happened in winter, ten in spring, eleven in summer, and two in autumn—that is, the large proportion, namely seventeen, occurred in the winter and spring months, as against thirteen in the summer and autumn months.

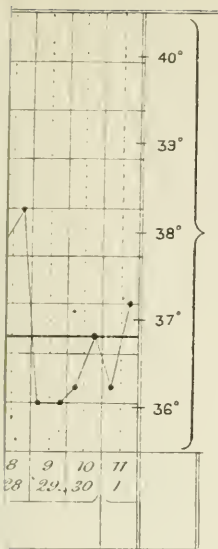
Although the larger number are thus credited to the colder months of the year, it is remarkable that as many as thirteen of them, or nearly a half, happened in the warmer months. It points to the conclusion that a low atmospheric temperature cannot be a very potent factor in the etiology of the disease, and supports the microbic theory of the causation of pneumonia in so far as a high temperature is conducive to the growth of disease germs.

Let me now say a few words regarding some of the commoner complications of croupous pneumonia of children, and first as to complications arising from involvement of the nervous system. It has already been pointed out that the region of lung affected seems to have little or nothing to do with the production of nervous symptoms. In children generally the nervous system is more

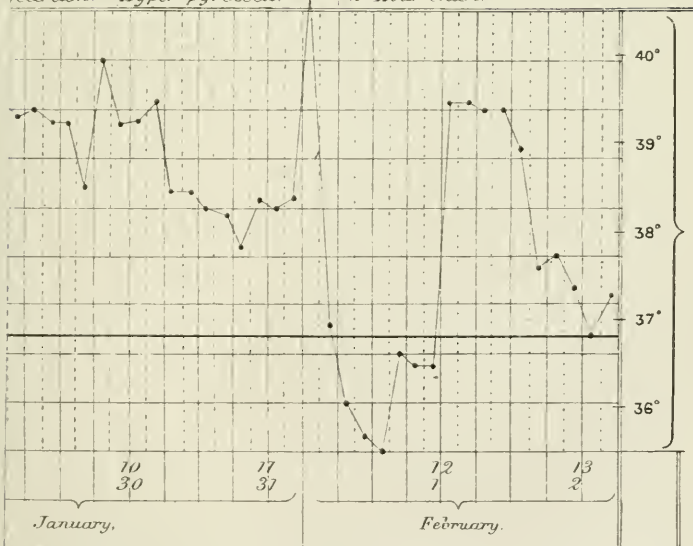
susceptible than in the adult, and therefore one would expect a more frequent occurrence of nervous symptoms in pneumonia. I feel doubtful, however, if such is the fact. Among the cases under consideration eleven are noted as having suffered from nervous symptoms, but these in most of the eleven were trifling. In five only were the great nerve centres very decidedly affected.

Case 5 was very interesting and singular. A girl, aged 9, she was admitted on June 11th, 1885, suffering from a severe attack of chorea. Lungs and heart were normal. She improved under rest and other treatment till the 22nd June, when her temperature suddenly rose to  $102^{\circ}6$ . She was repeatedly and carefully examined, but nothing could be detected to account for the rise in temperature, which continued high till June 25th, when there was noted "slight impairment of percussion note at right apex, and weak vesicular breathing with occasional click at end of inspiration over dull area." On the 27th the report is,—“Note over right apex distinctly dull, and breathing markedly tubular in this region.” The fever kept high, usually running up to  $104^{\circ}$  in the afternoon; but on the 29th, the seventh day of the attack, it fell suddenly to subnormal, and did not rise again. In short, she passed through a typical attack of croupous pneumonia, and all evidences of consolidation had disappeared from the right apex by the 3rd July. A remarkable point about the case was that the choreic movements became much worse with the first rise of temperature indicative of the pneumonia, and continued so till the temperature fell again, when they suddenly subsided. They were so violent that the patient had occasionally to be held down in bed. She had not, however, the slightest cerebral disturbance during the whole attack—no delirium, and intelligence perfect throughout. She was dismissed on the 5th August with a normal chest, and all choreic movements gone.

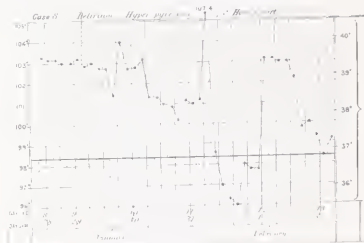
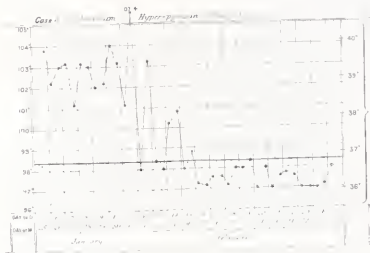
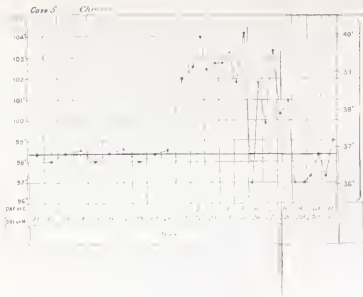
Case 8 is interesting, not only on account of the nervous symptoms, but also because of the hyperpyrexia, the temperature having on one occasion reached the alarming point of  $107^{\circ}4$ . This was on the sixth day after his admission to Hospital, and, so far as could be ascertained, the eleventh day of the attack. The patient, a boy of 7, when admitted on the 25th January 1887, had a temperature of  $104^{\circ}$ ; respirations, 56; and pulse, 120. He was delirious, and was said to have been so for two days, his delirium taking the form of shouting and trying to get out of bed. Occasionally he lay quiet and collapsed, with eyes half-closed; pupils reacted to light—no squint; head somewhat flexed on chest; great hyperæsthesia of the whole surface of the body; both lungs were affected, and both in their lower portions, the right more than the left. He continued much in the same state till the evening of the 31st January, when his temperature rose suddenly to  $107^{\circ}4$ . An hour before it had been taken, and was found to be only  $101^{\circ}$ . He was put in the wet pack, and had five grains of antipyrin given to him.



*Delirium. - Hyper-pyrexia.* 107.4 2 Hour Chart.







The fever immediately began to subside, and in three hours it had fallen to  $98^{\circ}2$ . It continued to fall, and reached  $96^{\circ}$  nine hours after its extreme rise, and then began gradually to rise again. The temperature was irregular for a few days longer, reaching  $103^{\circ}$  on two occasions, but fell finally to normal on the fifteenth day of the attack. The delirium lasted till the morning after the high temperature occurred, and an extraordinary improvement had in that short time taken place in the condition of the child. He is then described in the report as "wonderfully improved, sitting up in bed quite collected, and playing with his toys." The chest physical signs had also changed markedly for the better. On admission he had also a minute trace of albumen in his urine, which, however, soon disappeared. There was nothing remarkable in his family history or home surroundings.

*(To be continued.)*

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### III.—THE RELATIONS OF THE PELVIC VISCERA IN THE INFANT.

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*(Read before the Edinburgh Obstetrical Society, 9th April 1890.)*

IN January 1886, Dr Johnson Symington read before this Society a very valuable paper on "The Position of the Uterus and Ovaries in the Child," in which he succeeded, by the aid of frozen sections, in giving a much clearer conception of the relations of these viscera in the child than is to be obtained from the study of most text-books on anatomy. It is my intention in this communication to lay before this Society some observations upon the relations of the pelvic viscera as they exist in the new-born infant. The conclusions to which I have been led are founded upon the examination by the frozen sectional method of seven full-time infants, four male and three female, and of one six-months' male foetus. The infants were, with one exception, placed upon the back during the freezing process, and sections were made and drawings obtained in the usual manner. In seven out of the eight cases there were no naked eye pathological conditions in the pelvis; but in one of the full-time female infants there was abdominal and pelvic peritonitis, and, as will be seen, this condition had led to a change in the normal relations of the tubes and ovaries.

In the new-born infant the bladder, the Fallopian tubes, the ovaries, and part of the body of the uterus cannot with strict accuracy be spoken of as pelvic viscera, for they lie above the plane of the pelvic brim; but as the child grows and the pelvis

enlarges, these organs descend below the brim, and it is convenient for descriptive purposes to apply the term "pelvic" to these structures as well as to the rectum, cervix uteri, vagina, and urethra. The relations of the pelvic viscera in the infant are greatly influenced by the form and dimensions of the bony pelvis at birth, and it is therefore necessary to state briefly the characters of that part of the infant's skeleton.

The sacrum, which in the fœtal state is quite straight, is very nearly so in the infant at birth, having only a small anterior concavity. The wings of the sacrum also are slightly developed, and hence the length of the bone is greater than its breadth. From several measurements I find the length of the sacrum to be on an average 2·7 ctns., and the average breadth to be 2·0 ctns.; thus the sacral index in the new-born infant is 76, and the sacrum, therefore, is markedly dolichohieric. In the adult, on account of the relatively large size of the sacral alæ, the platyhieric condition is arrived at, the sacral index being 112. The sacrum in the infant, therefore, resembles that bone in the bush Kaffir, in the Andamanese, in some Australian tribes, and also in the higher apes. The promontory of the sacrum is feebly developed at birth. The iliac bones, also, have in the infant an almost inappreciable anterior concavity, and the iliac fossæ can scarcely be said to exist. The angle of divarication of the ilia is much greater at birth than in adult life. Cleland gives  $86^{\circ}$  as the angle of divarication at birth as compared with  $50^{\circ}5$  in the adult female, and  $53^{\circ}$  in the adult male skeleton. The following were the measurements of the interspinous and intercrystal diameters in six infants' pelves:—

|         | Interspinous<br>diameter. | Intercrystal<br>diameter. |         | Interspinous<br>diameter. | Intercrystal<br>diameter. |
|---------|---------------------------|---------------------------|---------|---------------------------|---------------------------|
| Case 1, | 6·2 ctns.                 | 6·3 ctns.                 | Case 4, | 4·8 ctns,                 | 5·3 ctns.                 |
| " 2,    | 5·5 "                     | 6·0 "                     | " 5,    | 5·5 "                     | 6·0 "                     |
| " 3,    | 4·8 "                     | 5·2 "                     | " 6,    | 4·9 "                     | 5·4 "                     |

In the adult female the average measurement of the interspinous diameter is 23 ctns., whilst that of the intercrystal diameter is 25·5 ctns.

The rami of the pubic bones are stumpy, and, therefore, the symphysis is short. The primary ossific centres are present in the innominate bones, but they are separated by cartilage, and the acetabulum is principally cartilaginous.

The pelvis, as a whole, differs markedly from the adult condition. Superficial inspection is sufficient to show that the pelvic canal has a different form when compared with its form in the full-grown pelvis. The canal is somewhat funnel-shaped, and the pelvic brim is very oblique to the horizon. The greater obliquity of the pelvis in the infant is seen in the relation which the promontory of the sacrum bears to the symphysis pubis. The promontory is situated at a much higher level as regards the symphysis in the infant than in the adult, and, therefore, the plane of the brim comes to run

nearly perpendicularly to the horizon. On the other hand, a line drawn from the lower border of the symphysis pubis to the tip of the coccyx runs very nearly parallel to the horizon, and this fact demonstrates the absence of obliquity in the plane of the pelvic outlet.

Varying statements have been made with regard to the length of the various pelvic diameters in the infant. It is evident at a glance that the distance between the promontory of the sacrum and the upper border of the symphysis pubis (the conjugata vera) is greater than either the transverse or oblique diameters of the pelvic brim. In the adult pelvis, on the other hand, the conjugata vera is less than either the transverse or the oblique diameters of the inlet. In the infant the conjugata vera has an average length of 3·5 cts., whilst the transverse diameter at the brim measures about 2·5 cts.; in the adult female pelvis the conjugata vera measures about 10 cts., and the transverse about 12·5 cts. In the infant, therefore, the brim of the pelvis is longer in an antero-posterior than in a transverse direction, whilst in the adult the transverse diameter at the brim exceeds the antero-posterior. It has, however, been pointed out that the conjugata vera in the infant does not truly represent the antero-posterior diameter of the pelvic brim, and that the true pelvic inlet is bounded posteriorly by the body of the 3rd, instead of that of the 1st, sacral vertebra. A line drawn from the upper part of the body of the 3rd sacral vertebra to the upper border of the symphysis pubis may be taken as representing the antero-posterior diameter of the brim, and this diameter has been called the conjugata vera inferior. Balandin, Fehling, Litzmann, and Veit, to whom we are indebted for most elaborate statistics of the pelvic diameters in the infant, take the conjugata inferior, and not the conjugata superior, as the antero-posterior diameter with which the transverse and oblique diameters at the inlet may be most usefully compared. I have measured the pelvic diameters in the case of six infantile pelves, and the results of these measurements are embodied in the following table:—

|                      | I.      | II.     | III.    | IV.       | V.      | VI.     |
|----------------------|---------|---------|---------|-----------|---------|---------|
| Length of infant,    | 39 cts. | 42 cts. | 40 cts. | 42·5 cts. | 40 cts. | 42 cts. |
| Conjugata superior,  | 3 "     | 3·6 "   | 3·1 "   | 3·8 "     | 2·9 "   | 3·4 "   |
| Conjugata inferior,  | 2·1 "   | 2·6 "   | 2·6 "   | 3·0 "     | 2·0 "   | 3·0 "   |
| Transverse diameter, | 2·7 "   | 2·2 "   | 2·3 "   | 2·5 "     | 2·5 "   | 2·0 "   |
| Oblique diameter,    | 2·5 "   | 3·1 "   | 2·5 "   | 3·0 "     | 2·6 "   | 3·1 "   |
| Distance between     |         |         |         |           |         |         |
| ischial spines,      | 2·0 "   | 1·7 "   | 1·8 "   | 1·8 "     | 2·3 "   | 1·6 "   |
| Antero-posterior     |         |         |         |           |         |         |
| diameter of outlet,  | 1·5 "   | 2·0 "   | 1·5 "   | 1·6 "     | 1·8 "   | 2·4 "   |
| Distance between     |         |         |         |           |         |         |
| ischial tubers,      | 1·8 "   | 1·5 "   | 2·0 "   | 2·0 "     | 2·0 "   | 1·7 "   |

The smallest child measured 39 cts. in length, and the largest 42·5 cts. The average lengths of the diameters as obtained from the above table are as follow:—



|                                                 |            |
|-------------------------------------------------|------------|
| Diameter conjugata superior, . . .              | = 3.3 cms. |
| Diameter conjugata inferior, . . .              | = 2.55 "   |
| Diameter transversa (at brim) . . .             | = 2.36 "   |
| Diameter obliqua (at brim) . . .                | = 2.80 "   |
| Distance between ischial spines, . . .          | = 1.86 "   |
| Antero-posterior diameter (at outlet) . . .     | = 1.80 "   |
| Distance between tuberosities of ischium, . . . | = 1.96 "   |

The above figures represent the absolute lengths of the diameters; in the following table I have placed side by side the relative lengths of the diameters obtained by Balandin and by myself in the new-born infant, and by Litzmann in the adult female. The conjugata vera is represented by 100.

|                                              | Balandin,<br>14 pelves. | Ballantyne,<br>6 pelves. | Litzmann,<br>in adult pelvis. |
|----------------------------------------------|-------------------------|--------------------------|-------------------------------|
| Conjugata vera, . . .                        | 100                     | 100                      | 100                           |
| Transversa at brim, . . .                    | 105                     | 92                       | 129                           |
| Obliqua at brim, . . .                       | 108                     | 109                      | 120                           |
| Distance between ischial spines, . . .       | 75                      | 72                       | 96                            |
| Antero-posterior at outlet, . . .            | 92                      | 70                       | 119                           |
| Distance between ischial tuberosities, . . . | 73                      | 76                       | 115                           |

From the study of the foregoing table it will be seen that my figures agree with those of Balandin in showing that in the infant the longest pelvic diameter at the brim (leaving out of account the conjugata superior) is the oblique; but they differ in the fact that whilst Balandin gives the antero-posterior diameter as the shortest, my measurements would seem to show that the transverse is the shortest brim diameter. In the adult female pelvis, as every obstetrician knows, the shortest diameter at the brim is the antero-posterior, the longest is the transverse, whilst the oblique occupies an intermediate position. With regard to the distance between the ischial spines and that between the ischial tuberosities in the infant, my results tally with those of Balandin; but as regards the antero-posterior diameter of the outlet, my figures are larger than those obtained by Balandin. In the adult the three above-named diameters are all greatly increased in their relative length, showing the extent to which the lower part of the pelvis opens up in the adult. In the adult female pelvis, therefore, the ischial tuberosities and the ischial spines are much more widely separated than in the infant, and the separation of the tuberosities is relatively greater than that of the spines.

Such being the characters of the pelvis in the infant, it is easy to understand how several of the viscera which are pelvic in position in the adult come to lie above the brim of the pelvis at the time of birth. The bladder, rectum, and the uterus and annexa may now be conveniently studied in detail.

*The Bladder.*—Symington, in his work upon the *Topographical Anatomy of the Child*, states that the description of the bladder in

the new-born infant given in the text-books of anatomy is meagre, unsatisfactory, and even inaccurate, and with this statement I can fully concur.

*Position of the Bladder.*—The bladder of the infant is even when fully distended almost entirely an abdominal organ. In the six months' fœtus, a male, the bladder, which was distended with clear, pale-yellow urine, lay, as will be seen in the drawing of the sagittal mesial section of the pelvis (Plate I.), almost entirely above the pelvic brim, only a small part of the lower and posterior segment lying below that plane. In the case of a full-time male infant (Plate II.), in which the bladder was very greatly distended with urine, a still smaller part of the lower end of the viscus lay below the pelvic brim, in the plane of which lay the vesical openings of the ureters. In this specimen the section passes slightly to the right of the middle line, for it cuts through the right ureter at its point of entrance into the bladder. In the case of another full-time male infant (Plate III.), in which the bladder was only partially filled with urine, the same relation of that viscus to the plane of the brim was found to exist. In this case the whole bladder cavity is not laid open, as the section was made considerably to the right of the middle line of the body. In the cases of three full-time female infants (Plate IV.), in all of which the bladder was empty, an almost inappreciable part of the vesical cavity lay below the plane of the brim. Symington states that fully half the bladder in the infant lies within the cavity of the true pelvis and below the plane of the brim. The specimens above mentioned do not show this disposition of the bladder, but in three of the cases (two male and one female) there existed a circumstance which may serve to explain the difference in position of the bladder. This circumstance consisted in the presence of a loop of the lower end of the descending colon or of the upper end of the sigmoid flexure within the pelvic cavity, lying in the female infant in the right part of the utero-rectal pouch, and in the male infants in the recto-vesical pouch. In the other female infants the bladder was empty, and was not therefore distended at its lower end; and it must not be forgotten that in them there lay part of the *uterus* within the pelvic brim. In the case which Symington figures in his *Atlas* (p. 68), in which half the bladder lay in the pelvis, the infant was a male, therefore there was no uterus to fill up the brim, the bladder also was distended, and bulged backwards towards the sacrum; and further, there was no loop of sigmoid flexure in the pelvis, the posterior vesical wall lying in contact with the rectum, and the recto-vesical pouch being empty. If the pelvis contain in addition to the rectum a twist of sigmoid flexure, and more especially if the subject be a female, it is difficult to see where room can be found within the pelvis for fully half the bladder. The arrangement of sigmoid flexure to which I have above alluded is, I believe, a very common one in the infant, and I find that Jacobi

(*Archives of Pediatrics*, 1888, p. 204) makes the statement that "the sigmoid flexure is bent upon itself several times in the narrow pelvis of the infant." In the case of male infants in whom no loop of sigmoid flexure exists in the pelvis, and in which the bladder is distended, that organ may be found lying to some extent below the plane of the brim; but in the female infant, where the uterus partly fills up the brim, and in male infants, where the sigmoid twist occupies the pelvic inlet, the above-described position of the bladder must be the usual one. The bladder is, therefore, practically entirely an abdominal organ at birth.

In my specimens the vesical orifice of the urethra lay very nearly at the level of the upper border of the symphysis pubis, and in all only a very small part of the vesical cavity lay behind a line dropt vertically through the orifice of the urethra. The position of the upper end of the bladder varies with the state of distension of the viscus. Of three cases in which the bladder was empty, in two its upper end lay 2·3 ctns. above the symphysis pubis, and in the other case (in which the infant was frozen in the genu-pectoral position) it lay 3 ctns. above the level of the symphysis. In one case in which the bladder contained a little urine, its upper end was 2·5 ctns. above the symphysis; and in another case in which the bladder was enormously distended, its upper margin was found 2 mms. above the umbilicus (4·5 ctns. above the symphysis). It is probable that the empty bladder in the infant reaches nearly half way to the umbilicus.

*The Form of the Bladder.*—The bladder of the infant is often described as pyriform in shape, with the larger end superior; but frozen sections have clearly shown that except in cases of over-distension this is not the normal form of the viscus. In the cases in which the bladder was quite empty, its cavity was seen to form a continuation of the urethral canal, and the anterior and posterior walls were in complete apposition. In one of Symington's cases (fig. 27 in his *Atlas*) the bladder, which contained about 1 drachm of urine, is seen to have an egg shape, the larger end of the ovoid being directed downwards and backwards, and in one of my cases (Plate III.), in which the bladder contained a few drops of urine, the viscus is seen to have a somewhat triangular form, the base being below and the apex above. In this case there was a very small vesical cavity, but even with this small cavity it could be clearly seen that the larger portion of the cavity was situated inferiorly and not superiorly. In the six months' foetus the bladder, which was pretty well filled, had a somewhat ovoid form, but there was no great difference in the size of its two poles. In another case (Plate II.), the bladder was over-distended, reaching above the umbilicus, and in this solitary instance the upper end of the bladder cavity was larger than the lower. It may be concluded that the normal form of the partially distended bladder is ovoid, and that, as Symington states, the larger end is directed downwards

and slightly backwards. The rugæ on the bladder walls are well seen in the empty bladder, and in the partially filled organ these are present only at the upper end, whilst in the fully distended viscus these are absent altogether. It is easy to conceive that as urine begins to dribble into the empty bladder, it will first accumulate at the lower end of the organ, and there separate the walls and smooth out the rugæ; and that as the distension becomes more marked, the upper part of the bladder will also become distended, and the rugæ will disappear both at the upper and lower extremities of the viscus. The important fact with regard to the form of the bladder in the infant is, that the broad end is directed downwards.

*The Relations of the Bladder.*—In the infant the anterior vesical wall is in close contact with the anterior abdominal wall, and there is no intervening pouch of peritoneum. The reflection of the peritoneum from the anterior abdominal wall on to the posterior bladder wall usually takes place a little below the level of the umbilicus, and from 2 to 3 cms. above the upper border of the symphysis pubis. In one case in which the bladder was over-distended, the peritoneum passed to the posterior surface of the bladder about the level of the umbilicus. The anterior surface of the bladder, triangular in shape, is, therefore, entirely uncovered by peritoneum, a fact of great importance to the surgeon who may be contemplating operative interference for stone. Posteriorly the peritoneum passes over the bladder wall, reaching in the male infant to a point immediately below the vesical orifice, and here coming into relation with the small prostate gland, another fact which is of great importance surgically. In the female infant the peritoneum does not descend so low posteriorly, for its point of reflection on to the anterior uterine wall lies above the level of the internal urethral orifice. In the infant the posterior relations of the bladder are less constant than are its anterior relations. In one male infant the bladder was related posteriorly to a loop of sigmoid flexure, and to the commencement of the rectum; in another the anterior surface of the cæcum was in relation with the posterior vesical wall, but in this case the cæcum lay mesially, and was therefore abnormal in position; in a male fœtus of six months the bladder was related posteriorly to the rectum and to some coils of small intestine; and in yet another premature infant with dropsy, the posterior bladder was in contact with ascitic fluid which lay in the recto-vesical pouch of peritoneum. In the female infants the bladder lay in close relationship with the uterus posteriorly, but in one case there intervened a loop or two of small intestine, which lay in the utero-vesical pouch of peritoneum, and in this case also the right Fallopian tube lay behind and a little to the right side of the bladder, being also in the utero-vesical pouch. The hypogastric arteries run laterally to the bladder, converging towards the umbilicus.



*The Size of the Bladder.*—The bladder is relatively small in infants, and this fact is at least one of the causes of the frequency of micturition in infants and young children. When empty the cavity of the organ measures from 2 to 2·5 ctns. in length; but that the bladder can in exceptional circumstances be greatly distended with urine is proved by one of my cases in which its upper wall reached to a point 1 or 2 millimeters above the umbilicus. It is rare for the bladder to contain more than 1 drachm or 1½ drachms of urine at a time at birth.

*The Urethra.*—In the female infant the urethra is pelvic in position, and runs at first downwards parallel to the axis of the pelvic canal, it then turns slightly forwards and ends at the meatus urinarius externus, about 1 ctm. in front of a line drawn vertically downwards from the lower border of the symphysis pubis. Dr Symington has demonstrated that in the young female chimpanzee the meatus urinarius lies behind a line drawn vertically downwards from the symphysis. There is no approach to this condition seen in the human female infant. The length of the urethral canal alone is about 4 ctns. in the female, and a little more than 6 ctns. in the male infant. I have passed a No. 10 catheter with ease through the infantile urethra.

*The Ureters.*—In two cases I traced the course of the ureters by injecting them with quicksilver. They lie immediately internal to the external and internal iliac vessels at the brim of the vessels, and dip down under the broad ligaments close to the sides of the uterus, and rise again slightly to open into the bladder at or immediately above the plane of the brim.

*The Rectum.*—The relations of the rectum may now be considered. This part of the intestinal canal is relatively larger and more vertically placed in the infant than in the adult. Its large size and vertical position are taken advantage of by the physician, who often finds it useful to take the infant's temperature by means of the thermometer passed into the rectum. It is also probable that the rectum may come to be more generally employed in diseases of infancy for the purposes of alimentation by nutritive enemata than it has hitherto been. The rectum in the infant may, as in the adult, be divided into three portions. The first part is nearly quite vertical, and passes down in front of the sacrum to the lower part of that bone, where it turns slightly forwards to become continuous with the second part. If the first part of the rectum be empty, as in one of my cases where the infant lived for six days, it frequently forms one or two lateral bends; but if it be distended with meconium, as in the other infants observed, this part of the bowel is nearly quite straight. The second part is very short in the infant and runs downwards and forwards. The third part is relatively long, and passes downwards and slightly backwards to terminate at the anus. This part of the intestine is, therefore, more worthy of its name, *rectum*, in the infant than in

the adult, where it is far from being a straight tube. Its straightness, large size, and vertical position may have not a little effect in favouring the production of prolapsus recti, a common malady in the infant, and the rational treatment of this disease will, therefore, be to use palliative measures until the infantile disposition of the rectum becomes changed into the adult. The peritoneum descends in both male and female infants in front of the rectum to about the level of the fourth sacral vertebra posteriorly, and to that of the middle of the symphysis pubis anteriorly. Posteriorly the rectum is in contact with the anterior surface of the sacrum and coccyx, and has in the upper part of its course a meso-rectum.

*The Sigmoid Flexure in the Pelvis.*—It may be well here to restate the fact that in several of the infants examined a loop of the sigmoid flexure formed one of the pelvic contents. In the male infants it lay in the middle line or a little to the right of it; between the rectum and bladder in the recto-vesical pouch, and in one female infant it lay in the right compartment of the pouch of Douglas behind the right broad ligament.

*The Anus.*—The anus in the infant is directed downwards and slightly backwards. On account of the small degree of development of the gluteal regions in the infant, the anus does not lie in a depression between the buttocks as it does in the adult. A recognition of this anatomical fact would tend to save many a one from the rather humiliating position of having failed to diagnose a breech presentation. A peculiarity pointed out by Symington is, that a line dropped vertically from the tip of the coccyx will pass through the anal aperture, and this fact I was able to demonstrate in several of the sections made. In the infant, therefore, the anus is situated relatively posterior to the position it occupies in the adult.

*The Uterus.*—The uterus differs in many points from that organ in the adult, and there also exists considerable difference of opinion as to what are the normal topographical relations of the infantile uterus. I have studied the uterus in the new-born infant in three cases by the frozen sectional method, and in many other cases by simple dissection, and have compared the results thus obtained with the conclusions of Boullard, Bandl, Klob, Kolliker, and Symington.

*Position of the Uterus.*—The uterus at birth is partly an abdominal and partly a pelvic organ. In the three full-time infants examined by the frozen sectional method, the proportion of the entire length of the uterus which lay above the pelvic brim varied from a little more than one-third to nearly a-half. In one of Symington's sections (*Trans. Ed. Obst. Soc.*, vol. xi. p. 36), the proportion of uterus lying above the pelvic inlet is less than one-third. It is probable that the proportion of the uterine mass which lies in the abdomen varies considerably in individual cases,

and is influenced to some extent by the condition of the adjacent intestine. In the new-born infant the rectum and sigmoid flexure are distended with meconium, and this may serve partly to explain the high position of the uterus in the cases which are noted above.

With regard to the relation of the uterus to the horizon, and of the body of the uterus to the cervix, authorities are at variance. Most writers assert that the uterus is normally anteverted, and some hold that it is also slightly anteflexed, whilst others believe that it is sometimes straight. I do not think that one position can be assigned to the infantile uterus as the normal; in my three cases, in all of which the rectum was distended and the bladder empty, the uterus lay in an anteverted position; but had the conditions been different—had the bladder been distended and the rectum been empty—the uterus would, no doubt, have occupied a nearly vertical position. I have not seen the organ anteflexed, although it may occur; and with regard to retroflexion there seems to be no doubt that such a position is in the infant always pathological, and, indeed, its occurrence is very rare, almost the only cases recorded being two noted by Ruge (*"Zwei Fälle von Retroflexio Uteri bei Neugeborenen," Zeitschr. f. Geburtsh. und Gyn., Bd. ii., p. 24*), in both of which the uterus was abnormal in structure. The presence of the rectum filled with meconium, and of the loop of sigmoid flexure, will tend very much to keep the uterus in a position of anteversion, and, as above stated, I look upon the vertical position and the position of anteversion as representing the normal lie of the uterus in the new-born infant. If the bladder be distended, the uterus will be more or less vertical; if undistended, it will be anteverted in position.

In one of the cases examined there was, in addition to the anteversion, a slight degree of torsion of the uterus. The anterior surface faced towards the front and the left in such a manner that the uterine end of the right Fallopian tube lay anterior to the uterine end of the left tube. In this case a loop of sigmoid flexure occupied the right compartment of the pouch of Douglas, and being distended with meconium, may by its pressure have caused the torsion of the uterus. The adult uterus has also in its normal position this slight degree of torsion, but, as is well known, in pregnancy there is in the great majority of cases of torsion in the opposite direction, so that the anterior surface of the uterus faces to the front and to the right side. The torsion in pregnancy is usually ascribed to the presence of the rectum on the left side, and it is reasonable to suppose that the primitive twisting of the uterus seen in this case and in the adult *unimpregnated* uterus may be due to the presence of sigmoid flexure in the right side of the pelvic cavity in the pouch of Douglas.

*Size of the Uterus.*—In the infant, as is well known, the cervix uteri is relatively much larger, both in length and thickness, than

the body of the organ. The average length of the uterus in the new-born infant is usually placed at 2·5 ctns., but in nearly all the cases I have examined I found this measurement exceeded. In one case the uterus measured 3·2 ctns. in length; in another infant the measurement was as much as 4·1 ctns., and even in a seven and a half months' infant the uterus was found to be 2·7 ctns. in length. In the case of four uteri from new-born infants measured by Symington, in two the length was 2·5 ctns., in one it was 2·6 ctns., and in one it was 3·0 ctns. In the following table are given the average measurements obtained from the examination of the uterus in four infants:—

|                                                         |           |
|---------------------------------------------------------|-----------|
| Length of uterus from anterior lip of cervix to fundus, | 3·4 ctns. |
| Sound passes in to a distance of . . . . .              | 3·2 "     |
| Transverse diameter at fundus uteri, . . . . .          | 1·1 "     |
| Antero-posterior " " " " " " " " " " " "                | 0·8 "     |
| Thickness of wall " " " " " " " " " " " "               | 0·2 "     |
| Antero-posterior diameter of cervix uteri, . . . . .    | 0·9 "     |
| Transverse " " " " " " " " " " " "                      | 1·25 "    |

The above table shows that in these infants the cervix uteri was larger both in the antero-posterior and in the transverse direction than was the fundus uteri, but the difference was not so large as might have been expected from the statements made by some authors. No doubt there are considerable individual differences depending upon the size of the infant, etc. It was also noted that, as a rule, the anterior lip of the cervix was very slightly longer than the posterior; but in one case the two lips were of practically the same length. The gaping condition of the os uteri was a notable character of all the uteri I examined, and in all of them the folds of the arbor vitæ were prolonged to the fundus. There was one longitudinal fold on the posterior wall which extended from os externum uteri to fundus; in the lower part of the uterus there were also many transverse folds, while near the fundus the folds ran in an oblique direction. On the vaginal aspect of the cervix some rugæ were usually seen, but only on the anterior lip. Posteriorly the peritoneum descended behind the uterus to a level one or two millimeters below that of the os externum, whilst anteriorly it descended to a point almost exactly half-way between fundus and os externum uteri.

*The Fallopian Tubes.*—The Fallopian tubes in the new-born infant have an average length of from 2 to 3 ctns., and the right tube is usually a little longer than the left. There are at birth from three to five sinuosities on each tube, but in the fœtus at an earlier period of intra-uterine life these are more numerous, and are found at the uterine end of the tube as well as more peripherally (Plate V.) Freund points out how the sinuosities disappear from the uterine end of the tube first, and he attaches considerable importance to their presence in adult life as an etiological factor in the production of hydro- or hæmato-salpinx.



The position and direction of the Fallopian tubes were ascertained by allowing the frozen sections to thaw partially, and by then removing the coils of small intestine which lay in front of the uterine appendages. In two cases which were treated in this way the tubes were seen to have a general direction outwards, backwards, and downwards. The downward direction of the tubes is due to the fact that the uterine fundus lies above the plane of the brim. The uterine end and inner third of the tube lie at the level of the fifth lumbar vertebra above the brim of the pelvis, whilst the fimbriated end lies at or below the plane of the brim. In one case there was peritonitis in the new-born infant, and in this case the tubes and ovaries were both firmly adherent to intestinal coils to the cæcum on the right side and to the sigmoid flexure on the left; in this case also the tubes had a general upward direction, the result evidently of the peritonitic adhesions.

*The Ovaries.*—In the infant the ovaries lie in a somewhat vertical position, near to the uterine fundus and behind the Fallopian tube of that side. What is usually described as the outer end of the ovary is seen projecting upwards above the Fallopian tube, and the long axis of the ovary runs from above downwards and inwards. The surfaces of the ovary usually termed anterior and posterior are internal and external in the infant, and the borders are anterior and posterior. In one case, that in which there was a degree of lateral twisting of the uterus, the right ovary lay anterior to the uterus, and the left in a plane somewhat posterior to it; but as to the frequency of this arrangement I can make no definite statement. Since the ovaries lie above the plane of the brim, and since the broad ligaments are not at all tense in the infant, it is probable that both ovary and tube may occupy positions other than those described. It is difficult to lay down with any degree of definiteness their normal position at birth.

*The Vagina.*—In the new-born infant the vaginal canal is relatively long, and in the first part of its course it runs almost vertically downwards, it then changes its direction, and passes downwards and slightly forwards to end at the hymen. It does not, therefore, as in the adult, run upwards and backwards in a direction nearly parallel to the plane of the brim, but is in the infant more nearly parallel to the axes of the rectum and urethra. It forms with the uterus a very obtuse angle. The vagina varies in length from 2·5 to 3·5 ctms., and I have not noted any difference in the depth of the anterior and posterior fornices. Its form on section somewhat resembles an H, the anterior and posterior walls being nearly in close contact in the middle line. The vaginal walls are covered with numerous transverse rugæ.

The statements made in the preceding pages are founded in great measure upon a thesis on "Certain Anatomical and Pathological Conditions in the Fœtus and Infant at Birth," for



Fig 1



Fig 2

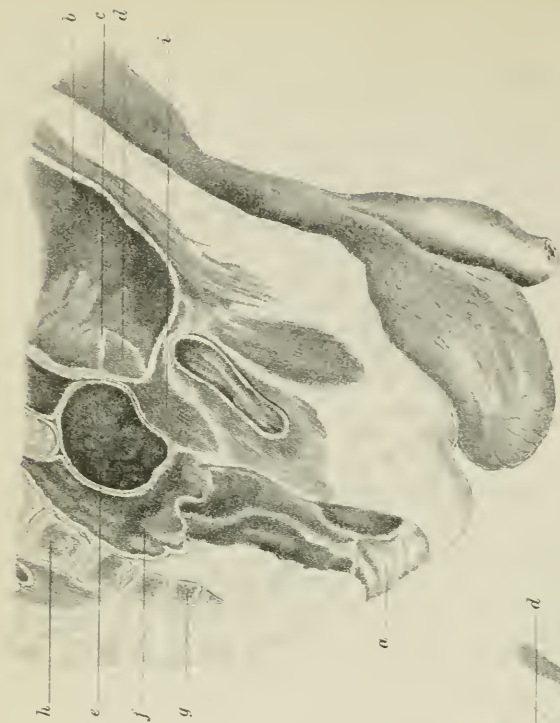


Fig 5

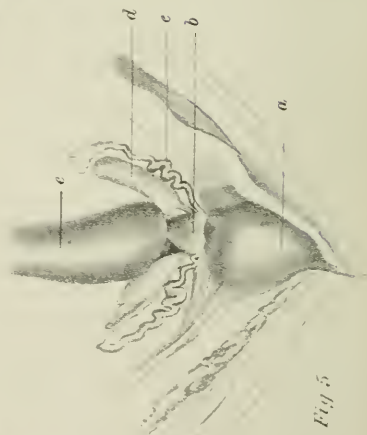




Fig. 3



Fig. 4





which the Gunning-Simpson Prize and a gold medal were awarded in 1889; but I have supplemented the material which I then possessed by frozen sections of three additional new-born infants—two male and one female.

#### DESCRIPTION OF PLATES.

- FIG. 1.—Vertical sagittal section of pelvic region in six months male fœtus. *a*, 1st sacral vertebra; *b*, coccyx; *c*, rectum; *d*, bladder, distended with urine; *e*, umbilical cord; *f*, coils of large intestine; *g*, filum terminale of spinal cord; *h*, pubic bone.
- FIG. 2.—Vertical sagittal section of pelvic region of full-time male infant (section slightly to right of middle line anteriorly). *a*, anal aperture; *b*, bladder, greatly distended with urine; *c*, opening of left ureter; *d*, vesical trigone; *e*, loop of sigmoid flexure in pelvis; *f*, rectum; *g*, coccyx; *h*, 3rd sacral vertebra; *i*, prostate gland.
- FIG. 3.—Vertical sagittal section of pelvic region of full-time male infant (still-born). Section is to the right side of the middle line. *a*, umbilical cord; *b*, partially filled bladder; *c*, cæcum and ileo-cæcal valve; *d*, loop of sigmoid flexure in pelvic cavity; *e*, pubic bone; *f*, scrotum and right testicle; *g*, urachus; *h*, penis.
- FIG. 4.—Vertical sagittal section of pelvic region of full-time female infant (frozen in genu-pectoral position). *a*, coccyx; *b*, 1st sacral vertebra; *c*, body of uterus; *d*, cervix uteri; *e*, vagina; *f*, empty bladder; *g*, symphysis pubis; *h*, right ovary and Fallopian tube; *i*, rectum; *k*, anal aperture.
- FIG. 5.—Dissectional view of pelvic viscera in six months fœtus (from above and from the front). *a*, bladder; *b*, fundus uteri; *c*, left Fallopian tube, showing tortuosities; *d*, left ovary; *e*, rectum.

#### IV.—ANOTHER THEORY OF DEFECTIVE COLOUR-VISION ("COLOUR-BLINDNESS.")

By SOMMERVILLE OLIVER, M.D., Edinburgh.

WE are told that, owing to the physical nature and arrangement of the infinitesimally minute particles or molecules of which a substance may consist or be made up of, the light which enters the substance may be wholly, or almost wholly, absorbed, and that the substance therefore appears to be black. And we are also told that if, instead of being absorbed, the whole of the light be reflected, the substance appears to be white. And, further, it is said that, "if, owing to some peculiar molecular character and structure, the nature of which is not yet at all understood, light should be decomposed in entering and passing through the substance, a different colour from either black or white will be produced. For ordinary white light, as is well known, is composed of the rays of all the primary colours, and when these are separated in passing through a substance, one or more of the rays are reflected, while the remainder are absorbed by the molecules; and the tint of the ray which is reflected to the eye by the light-decomposing substance, or the mixed colour due to the blending of two or more strongly reflected rays, is the colour with which the substance in

question will appear to be invested. Strictly speaking, therefore, the colour of a pigment is due to those constituents of light which it cannot absorb, and which are reflected from it to the eye of the observer."

Now, without assuming either the existence of "three sets of elements within the eye, stimulation of either of which gives rise to a fundamental colour sensation;" or the existence of three modifications of "visual purple" in the retina; if we bear in mind that all eyes are not equally capable of refracting and correctly bringing to a focus on the retina differently directed beams of white or colourless light—some eyes (hypermetropic) being adapted for convergent rays, some (myopic) for divergent rays, and others (emmetropic) for parallel rays, and when we consider that unless the direction of the rays of light suit the state of refraction of the eye, an object looked at may be very indistinctly seen, if seen at all, is it unlikely—seeing that the rays of all the primary colours of which white or colourless light is composed vary in refrangibility—that defective colour-vision ("colour-blindness") may be dependent on inability of some eyes to correctly refract (or to refract at all) one or more of the coloured rays which are reflected from the light-decomposing substance or object looked at to the eyes? If the coloured rays of which white light is composed vary in refrangibility according to their wave-lengths, and if, owing to some peculiarity, congenital or acquired, certain eyes fail to correctly bring to a focus on the retina one or more of the reflected coloured rays which other eyes easily succeed in focussing, the object from which the reflected rays proceed cannot present the same tint or colour to both classes of eye, consequently there must be defective colour-vision in the case of those eyes which fail to make use, as it were, of the same number of reflected coloured rays as the other eyes are capable of doing.

Defective colour-vision may be conceived as resulting too if, in the case of some eyes, one or more of the coloured rays which are reflected by the (white or colourless) light-decomposing substance be, through some peculiarity of the eyes, reflected also at one of the refracting surfaces of the eye (the cornea, anterior, and posterior surfaces of the crystalline lens), and so prevented from reaching the retina.

In conclusion, I have only to state that I ventured to express these ideas as to the nature of defective colour-vision with the hope that they may attract the attention and elicit the opinion of such ophthalmic surgeons as may hold that the subject of "colour-blindness" is not yet indisputably elucidated.<sup>1</sup>

<sup>1</sup> If this theory of defective colour-vision be accepted, perhaps it could be utilized in a few cases thus,—the surgeon, being provided with a series of glass discs coloured in imitation of the hues seen in the spectrum of a beam of solar light (or those seen in the rainbow), might select one or more of the glasses, and, holding them before the eyes of his patient, endeavour to find a colour to match the tint of the coloured rays—the absence of which, in the case in hand, he supposes to be the *immediate* cause of the visual defect.

## X V.—CASE OF EXTENSIVE INJURY OF THE LEFT FRONTAL LOBE FROM A WOUND. T

By THOMAS LEISHMAN, M.B. &amp; C.M., Brechin.

W. C., 20 years of age, farm servant, was on Wednesday, 12th May 1887, engaged scaring rooks by firing at them with an old gun. During his dinner-hour he went out to have a shot behind the house. His mother heard the report of the gun, and as he did not return as expected to his dinner, she went out to look for him. She found him lying insensible on his back in a pool of blood, about one hundred yards distant. He had evidently discharged his gun while resting it on the top of the wall, with the result that it had burst, the breech being blown out. The fragment had been hurled upwards and backwards, and had struck the lad on his left temple, knocking him over. His friends at once conveyed him to the house and sent for me. When I arrived, about an hour after the accident, I found him lying in bed in a semi-conscious state, breathing stertorously, and incapable of speech. The pulse was very weak and irregular, and he was in a very collapsed condition, partly due to shock, partly to hæmorrhage, which had been very considerable. His face was much engrained with powder, principally on the left side. The pupil of the right eye responded to light. The left eyeball was completely destroyed, having evidently been struck by part of the breech. In the middle of the margin of the upper left eyelid a small piece of tissue was punched out about the size of a millet seed. Slight hæmorrhage from the left nostril and mouth was observable. The principal wound was a cavity in the frontal bone, extending upwards from the middle of the left supra-orbital ridge for a distance of two inches, transversely at the upper margin one and a half inches, at the lower margin nearly one inch. The superficial wound appeared to be smaller than that in the frontal bone, the tissues being very much torn and lacerated. The fracture in its outline was very irregular. No fragments of bone could be detected until the finger was inserted into the wound, when a small piece about the size of a shilling was felt embedded in the brain substance. This was found to be slightly adherent to the dura mater, and had to be twisted off with dressing-forceps. It proved on examination to be concave and smooth on its inner surface, and was evidently a portion of the inner table of the frontal bone. Several other small spiculæ were also found and removed without any difficulty. On inserting the finger deeply into the wound while searching for bone fragments violent vomiting was set up, which resulted in the ejection from the stomach of a large quantity of greenish offensive fluid, preceded by a little blood. The brain substance was much injured.

The wound was thoroughly washed out with a weak solution of carbolic acid, and dressed with pads of boracic lint, lightly secured



with a bandage. Cold water cloths, to be frequently renewed, were ordered to be applied to the head. Perfect quiet was ordered, and a little fluid nourishment to be given at intervals. Towards evening he rallied a little and passed a fairly quiet night. Next morning, when visited, his pulse was found better than on the previous day, being stronger and more regular. The dressings had become adherent to the wound from oozing of blood, and were removed with some difficulty. The wound was washed out antiseptically, and carbolic oil on lint was used for the next dressing. The brain substance was now seen protruding through the broken table of the skull and pulsating strongly.

For the first week the patient remained in much the same condition, the wound suppurating and discharging freely. Though he uttered words he could not speak intelligibly. He seemed to feel little or no pain, except when the wound was dressed. Generally he lay in a drowsy state, from which it was at times difficult to rouse him. His bowels were obstinately confined, and castor-oil had to be given to obtain relief. During this period the rise in temperature and pulse was slight. He was fed on milk food and beef tea.

About the beginning of the second week the stupor became deeper. The temperature and pulse gradually rose. Towards the middle of the week there was difficulty in swallowing, and involuntary passage of urine and fæces. He seemed at the same time to be in a most uneasy condition, groaning and rolling his head about. At other times he seemed to obtain temporary relief from lying on his face with his head pressed down into the pillow. On being asked a question, he would mutter some words, but no information could be derived from what he said.

The discharge from the wound now became very offensive, and the protruding mass of brain substance began to change colour, becoming first brown, gradually shading into black. Charcoal poultices were applied, when a slough began to separate from the brain substance, and was then easily removed in pieces. The largest piece was about the size of a shilling, and about an eighth of an inch at its thickest part, thin at the edges. As the surface of the wound became clean and healthy, the urgent symptoms gradually passed off, leaving the patient at the end of May in a very weak and exhausted condition. The carbolic dressings were again used, the wound showing signs of cicatrization from its edges. The injured eye had entirely disappeared, and the resulting cavity had much the appearance seen after enucleation of the eyeball.

About this time he would use profane language whenever the wounds were touched, or when he was annoyed in any way. In contrast to this, when he improved and was able to be out of bed, he spent much time in reading the Bible. His memory began to return, and he commenced to speak intelligibly, although it was

difficult for him to concentrate his thoughts on any subject for even a few minutes. His recollection of events up to the time of the accident was perfect, but everything after that for a period of about three weeks was a complete blank. He continued gradually to improve, and gained strength both mentally and physically till the end of June, when he was able to be out of bed. Red lotion was applied to the wound, as the process of healing was slow, and about the beginning of August the wound had closed. During July he suffered much from toothache on the left side, but would not permit the decayed tooth to be extracted. The sight of the right eye was much impaired for near objects, though distant ones were fairly well seen. He was so nervous that he would not suffer an examination to be made through the ophthalmoscope. Iodide of potassium was given in small doses, under which his sight seemed to improve, but his obstinate dislike to taking medicines was such that the remedy was not persevered with.

From this time till the end of the year, on three different occasions, pieces of dead bone worked their way out at the cicatrix, varying from less than half to an inch in length, of a white ivory-like appearance. On all of these occasions there was much pain and discharge, which continued for some days after their removal, accompanied with febrile disturbance. The wound always closed up shortly afterwards. The glands of the neck were enlarged and painful. The appearance of the cicatrix in the spring of 1888 was that of a marked depression over the cavity in the frontal bone, covered in with a thin, whitish, semi-transparent membrane, which moved with the pulsations of the brain.

For the last eighteen months the patient has been working off and on in the fields at light employment. He takes his food fairly well, but is very thin. His intelligence, as far as can be ascertained, was never very highly developed before the accident, and has certainly not been improved thereby. He is very irritable, and the least annoyance brings on a fit of violent passion, which leaves him weak and nervous. His memory is very defective. Severe headaches trouble him periodically—so much so that he has to remain in bed for a day or two at a time. He is afraid of going out at night in the dark alone; and unless some one is with him to guide him, is in danger of falling. At times he is very secretive and will hardly speak. Lately he has complained of pain and slight loss of power in his right hand. His sight is steadily becoming worse. When he reads his face is almost touching the book. Owing to his having removed with his parents from the immediate neighbourhood, he has not been seen by me for some time; but his latest symptoms were described to me by his mother, whom I chanced to meet some weeks ago. The continuance and increase of symptoms up to the present time seem to indicate that some retrogressive lesion is extending into the brain substance.

VI.—TETANOID CONVULSIONS IN AN INFANT;  
OPERATION; RECOVERY.

By T. R. RONALDSON, M.B., F.R.C.P. Ed.

*(Read before the Medico-Chirurgical Society of Edinburgh, 4th June 1896.)*

~~MR PRESIDENT AND GENTLEMEN,~~—The child whose case forms the subject of this short paper was born on the 8th of December 1886. He was a strong, well-nourished boy, above the average size and weight, and the third child. The labour was easy and normal in every way. The umbilical cord was unusually thick, from an excessive development of Wharton's jelly. The mother nursed the child from the beginning, and continued to do so until the usual time for weaning, no other food than her milk being required.

After my visit on the 17th of December, when the child was nine days old, it was first noticed that there was something wrong. At times the child cried and was restless, the left eye winked, the muscles of the left side of the face twitched, and the left side of the tongue swelled up in marked contradistinction to the right side. These symptoms began so slightly and progressed so quietly that the mother and a most intelligent nurse did not think it necessary to send for me until the 19th, two days after the onset of the illness. Having been informed of the nature of the attack, and knowing how healthy the child was, and that the umbilical cord had not separated although it was the eleventh day, I began to connect the case, as I proceeded to pay my visit, with those cases of tetanus we read of as occurring so frequently among babies in certain countries, and whose starting-point seems to be the neglected or badly taken care of umbilicus. On my visit I saw no reason to doubt the accuracy of the opinion I had formed. The child was, apart from the convulsions, the picture of health, well nourished, with digestion perfect, and with evacuations natural in quantity, quality, and frequency. The anterior fontanelle was somewhat fuller than usual, but that was entirely from the exceptionally well-nourished condition of the child. The temperature was normal, and continued so throughout the attack. The only unusual condition, apart from the convulsions, was that the cord had not separated. There was a distinct putrefactive odour about the black dried-up cord, but to the eye there was nothing to be seen but the usual amount of ulceration at the line of demarcation between the dead cord and the umbilicus. There was no inflammatory blush, no swelling, no unusual tenderness. At that time the convulsions were confined to the left side of the body; restlessness led on to tonic muscular contraction, and that was succeeded by well-marked clonic convulsions. Between the attacks the child was apparently perfectly well. I gave it as my opinion that probably the convulsions arose from some irritative condition

at the umbilicus. I completed the separation of the cord with scissors, gave directions that the stump should be carefully washed at intervals with corrosive sublimate solution and dressed with zinc ointment; ordered one drop of chlorodyne to be given mixed with water in six doses, and expressed the hope that, as the supposed irritation at the umbilicus subsided, the fits would disappear. The fits got worse; bromide of potassium and chloral, given up to 6 grains of the bromide and 4 grains of the chloral in the twenty-four hours, had no effect whatever in subduing their number or severity; nor had chlorodyne, 2 minims every four hours; nor had the local application of a 20 per cent. solution of cocaine, nor of the solid nitrate of silver. Warm baths increased them; they extended soon to the right side, and ultimately the whole muscular system was involved. They increased to the number of 204 in the twenty-four hours, while during their occurrence the tongue became blue-black, and at times well-marked opisthotonos supervened. On one occasion they were never absent for one whole hour, and for a period of nine hours the child was unable to suck in consequence of the frequency of the fits. When they did not come too rapidly, it took its nourishment greedily. They varied in frequency—from about 100 to 204 in the twenty-four hours—but not in such a way as to warrant us in believing that treatment, local or general, had any beneficial effect.

Dr Brakenridge, who saw the child with me on 24th December and subsequently, confirmed my diagnosis, giving it as his opinion that the convulsions were not due to any disease originating in the brain, but that they were peripheral in their origin, and probably had the umbilicus as their starting-point. Meanwhile, in spite of treatment, and although the navel stump was quickly and nicely healing, the fits went on, and we asked Mr Chiene to see the child with us on 27th December, to help us in deciding whether the umbilicus should be excised. Mr Chiene's opinion was that the condition was allied to tetanus, and he advised that, before excision was had recourse to, a more thorough antiseptic treatment of the stump should be tried. All medicine was stopped, and iodoform was carefully and diligently applied to the navel stump.

As no improvement resulted, chloride of zinc solution (40 grs. to ʒj.) was thoroughly applied on the 29th. That failing to benefit, Mr Chiene consented to excision, and on 31st December I freely and deeply excised the umbilicus. At once there was improvement, and the fits gradually decreased.

From 8 A.M., 4th January 1887, until the evening of the 5th they entirely ceased, but on that evening they again began. Next day I removed three silkworm-gut stitches which were apparently a source of irritation, as evidenced by an inflammatory blush around them, and the fits again began to decrease in number and severity, while at the same time the child slept more and took its nourishment better. As they did not entirely disappear, and as the nurse had



previously noticed that the child was distinctly better at the time when, after the employment of carbolic lotion during the operation, the urine was dark coloured, Dr Brakenridge suggested the use of sulpho-carbolate of soda internally. On the 13th January it was prescribed in 4-grain doses every two hours. That quantity, however, upset the digestion, and the fits increased. The dose was accordingly diminished. The fits again disappeared, but they began to return mildly on 25th January, and reached the number of 23 in the twenty-four hours on 27th January, and sulpho-carbolate, which had been given up, was again administered. On this occasion the fits were not so severe, and after the first day or two they only affected the eyes and mouth, gradually becoming slighter. On the 30th of January one slight fit ended the attack, and the child has been in good health ever since. Dr Edington, who kindly examined the excised umbilicus, did not detect any special organism in it.

In remarking on this case I do not feel that I am called upon to try to decide the question whether the convulsive motor phenomena were due simply to peripheral irritation, or to the presence of some specific organism which had gained entrance at the umbilicus. I must leave the decision of that question to the pathological experts present.

As to the effect of treatment, my friend Dr Brakenridge, if I remember rightly, was of opinion that, in the first place, absorption of carbolic acid by the wound, and, in the second place, the administration of sulpho-carbolate of soda internally, had a distinct influence for good. My own opinion was that the excision of the umbilicus determined the recovery.

And, lastly, the occurrence of such a case raises the question whether the umbilical cord of newly-born children should not be treated more carefully than it generally is. I am in the habit now of tying the cord with thread soaked in corrosive sublimate solution, of directing the nurse to wash the cord with the same, then to surround it with sublimated wool, and to bathe it with the solution from time to time should any putrefactive odour occur.

*Edin. Med. Journ.*

## VII.—TWO CASES OF LARYNGECTOMY.

Reported by DAVID WALLACE, F.R.C.S.E.

THE following two cases were treated by Professor Chiene. The one patient was treated in Hospital, and had complete laryngectomy performed. The other was a private patient, in whose case partial extirpation of the larynx was had recourse to. In both, the operations were necessary to effect the removal of epitheliomatous disease.<sup>1</sup>

<sup>1</sup> The first case occurred in Professor Chiene's Hospital practice when I was his house-surgeon, and the second case was operated on when I was his private assistant, and I had therefore the conduct of their after-treatment.

CASE I.—Mary H., æt. 32 years, married, was admitted into the Edinburgh Royal Infirmary on 24th October 1884. When admitted she complained of pain in the throat, accompanied with difficulty in swallowing, and hoarseness. Up to February 1884 the patient had been in good health, but in that month she complained, for the first time, of pain in the throat, which gradually became worse, until latterly she not only suffered severe pain, but could only swallow with the greatest difficulty. When admitted to the Hospital she was very thin, and stated she had been rapidly losing flesh, and that the only food she could swallow was gruel or liquids.

Laryngoscopic and other examination showed her condition to be due to epitheliomatous disease of the upper portion of the œsophagus, with, possibly, infiltration of, and pressure on the posterior part of the larynx. The glands were unaffected.

On 5th November Professor Chiene performed œsophagostomy.<sup>1</sup> The patient rapidly recovered from this operation, the wound healed rapidly, and the patient left the Infirmary on 1st December. From the time of the operation she was fed through an œsophageal tube passed by the wound. On 27th December she returned to Hospital much improved in general health, looking fatter and stronger; she had gained several pounds in weight between her discharge and re-admission, but complained of greatly increased difficulty in breathing, while locally she had much more pain. During the nights of 27th and 28th December the patient had several times great difficulty in breathing, which was sufficiently alarming to render tracheotomy an apparently imminent necessity. Professor Chiene recommended tracheotomy, but the patient refused to have any operation performed other than an attempt to remove the tumour. The difficulty in breathing having rapidly increased, and the patient being in great danger of asphyxia, Professor Chiene resolved to attempt the removal of the growth, and accordingly an operation with this object was performed on 31st December.

An anæsthetic was administered, and tracheotomy performed as low down as possible. As there was a possibility that the tumour might be removed by dissection off the laryngeal box without the removal of the whole larynx, an incision was made in the line of the upper part of the previous incision, *i.e.*, along the anterior border of the left sterno-mastoid muscle; at right angles to the upper part of this incision a transverse cut was made immediately below the hyoid bone. The attachments of the tumour were found to be so extensive, however—the posterior wall and left side of the larynx being infiltrated by it—that Professor Chiene determined to remove the whole larynx along with the upper portion of the œsophagus. The muscles attached to the thyroid were therefore divided close to the cartilage, the thyro-hyoid membrane cut through, and the whole

<sup>1</sup> This patient was shown to the members of the Edinburgh Medico-Chirurgical Society (*vide* Transactions, vol. iv.)

tumour mass, along with the larynx and anterior portion of the pharynx, drawn downwards and forwards, and separated from the trachea by a transverse cut immediately below the cricoid cartilage. The œsophagus was stitched to the upper part of the wound, and the upper end of the trachea brought forward and stitched to the muscles and skin.

During the operation the bleeding was readily stopped by forcipressure; to prevent blood passing down the trachea the head was kept well over the end of the table. When the bleeding had been arrested, the edges of the transverse incision and upper part of the longitudinal wound were brought together by horsehair sutures, the wound dusted with iodoform, and a small sponge introduced into the lower part of the wound to prevent any discharge or saliva passing into the trachea and thence to the lungs.

The patient quickly recovered from the shock of the operation, and passed a good night. Temperature in the evening, 100° F.; but in the early morning it fell to 99°·4 F.

Shortly stated, the after-history of the patient was as follows:—

*Jan. 1.*—Sponge removed, and wound stuffed with lint squeezed out of carbolic oil and iodoform. Patient has no pain, and expresses herself as feeling very well.

*Jan. 2.*—Condition much as yesterday. The patient is fed through tube passed by œsophagostomy wound. Diet consists of milk and beef-tea (peptonized).  $\mathfrak{z}$ ss. brandy given every two hours.

*Jan. 3.*—Complains of pain in right side; no abnormal physical signs detected. Hot fomentations applied. There is considerable expectoration of a very viscid muco-purulent character. The lint on removal from wound has a foetid smell, but the wound looks well.

*Jan. 4.*—Crepitations heard over base of right lung. Stimulation and other treatment continued.

*Jan. 5.*—The wound inflamed and irritable looking; expectoration increased in quantity, but otherwise patient in much the same condition as before.

*Jan. 7.*—Less expectoration; wound breaking down; discharge increased; pus apparently burrowing behind the trachea. The sutures used to retain œsophagus in position have given way, and the œsophagus has fallen down a little lower. Stimulants and digitalis continued.

*Jan. 8.*—Wound increasing in size; more pain locally; diarrhœa.

*Jan. 10.*—Patient rapidly sinking. Expectoration and discharge much increased. Respiration more hurried and pulse weaker. At 2.45 A.M. of 12th January patient died.

Microscopical examination of tumour showed it to be a well-marked squamous epithelioma.

CASE II.—Mr Y., æt. 44 years, married, manager in a paraffin work, was first seen by Professor Chiene in February 1889 in

consultation with Dr M'Bride. He complained of hoarseness in speaking, his voice having become reduced to a whisper.

His history previously to the time when he came under Professor Chiene's care was as follows:—In the beginning of October 1885 he noticed, for the first time, that he could not sing, although when speaking there was no roughness in the tone of his voice. Towards the end of November in that year he observed that he had become distinctly hoarse when speaking. In March 1886 he first consulted Dr M'Bride (Dr M'Bride has kindly given me his notes of this case), who noted that,—“Pharynx slightly catarrhal; vocal cords move freely, but congested, especially the right; remainder of larynx not congested. Ordered astringent spray; avoid irritants, and use voice seldom.” He derived no benefit from this treatment, and after some weeks gave it up, and did nothing further for his throat until August 1887, when he consulted Dr Hunter Mackenzie. Dr Mackenzie has reported the case and treatment while under his care in the *Edinburgh Medical Journal* of July 1888. Shortly stated, his report is to the effect that in August 1887 the patient “felt no pain, but a slight amount of discomfort when swallowing;” the left vocal cord had a nodular thickening on its anterior third, and from its thickened posterior third there sprung a sessile, fleshy-looking growth, which projected into the glottis.” Dr Mackenzie removed the growth by the endo-laryngeal method on three occasions, and states that up to April 1888 there had been no recurrence. In his notes he states that Dr Wolfenden, London, examined the tumour removed, and reported that it was an epithelioma (*Edin. Med. Jour.*, 1888).

Between April 1888 and September of the same year the patient did nothing further in the way of treatment, but his voice gradually got worse until on 7th September it was reduced to a whisper. He then again consulted Dr M'Bride, who found “pharynx slightly congested; larynx left cord outline lost; thickening below cord; right cord and false cord nodular. No specific history; probably not malignant, but due to constant irritation of paraffin fumes, etc.” At this time Dr M'Bride thought the tumour was probably simple in its nature, and was all the more willing to avoid operative interference as *the disease was bilateral*, and nothing but excision of both sides of the larynx would have availed for its satisfactory removal, assuming the disease to be malignant. He advised the patient, however, to see Dr Newman of Glasgow. Dr Newman believed it was probably innocent, but declined from its clinical characters alone to commit himself to its exact pathology. The patient had no difficulty or pain in swallowing, but in January 1889 began to suffer from pain behind the left ear, shooting up the left side of the head, and also “a sensation of something in my windpipe which I could not cough up and a tight sensation as if my collar was too small.” The feeling of tightness began in July 1887, but he did not feel it irksome after April 1888. He was short of breath for the first time on 2nd January 1889. There was little change in his condition, however, from 7th September



until February 1889. On 2nd February 1889, Dr M'Bride again examined the larynx, the appearance of which he found to be much altered. "On the right side there is a fungating mass involving the whole cord up to near the anterior commissure, while the nodule on the left cord has much increased in size, and acquired the chalky-white colour one often sees in epithelioma of mucous membranes." At the suggestion of Dr M'Bride, Professor Chiene was called into consultation to consider the advisability of laryngectomy.

On 10th February the larynx presented the following appearance:—"A wart diffused on left cord, and on the right side practically cord, false cord and arytenoid concealed by an irregular cauliflower excrescence."

On 19th February Professor Chiene was hurriedly sent for to see the patient, who was stated to be suffering from great obstruction of breathing. He had driven and walked too far that day, and so fatigued himself; the difficulty in breathing had begun suddenly. By the time Professor Chiene reached the patient the difficulty in breathing had ceased, and further inquiry seemed to point to an attack of syncope rather than to any obstruction to breathing from spasm or blocking of the glottis. The breathing was slow, but audible. During sleep there was distinct whistling respiration. On the following day the patient was removed to a nursing home, and as there was clear evidence that the tumour was steadily, though slowly, increasing in size, and that tracheotomy would be required sooner or later, it was decided to perform this operation at once.

Local anæsthesia was produced with cocaine, and the trachea opened by the high operation. No blood passed into the trachea. A Foulis tracheotomy tube was introduced. The patient made a rapid recovery from the operation, and having no further anxiety from risk of choking, slept better, and improved very markedly in his general health. (See Chart for temperature, etc.)

The patient now expressed himself anxious to have the whole tumour removed, and on 10th March Professor Chiene, in the presence of Dr M'Bride, assisted by Drs Stiles, Buist-Sparks, and myself, performed the operation of partial laryngectomy.

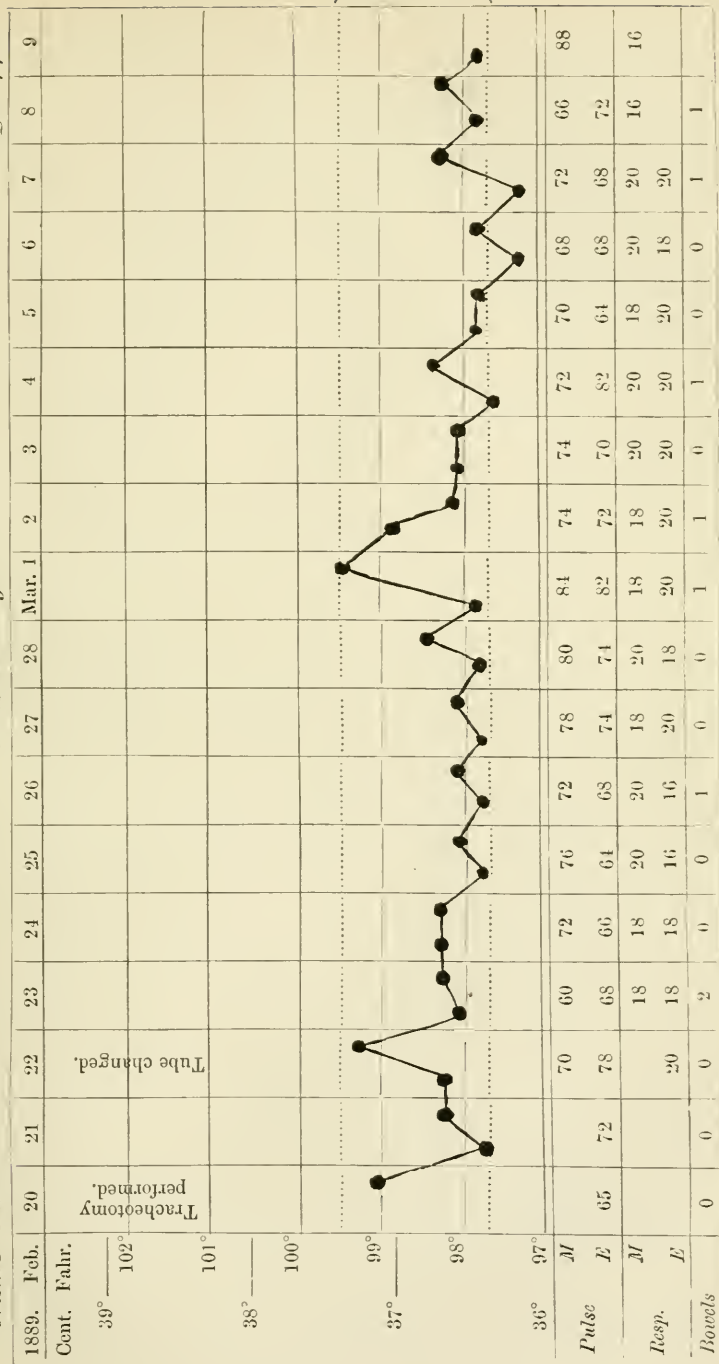
*Operation.*—The patient was anæsthetized without difficulty by chloroform, administered by a simple apparatus (see remarks), through the tracheotomy tube. The patient was placed with his shoulders raised and head hanging over the end of the table. An incision was made in the middle line of the neck from the hyoid bone to the level of the cricoid cartilage. The sterno-thyroid and thyro-hyoid muscles were separated from the right ala of the thyroid cartilage, and turned back along with the skin and fascia covering them. The edges of the wound were held apart by two retractors, kept in position by an elastic bandage passed round the neck posteriorly. All bleeding having been arrested, the thyroid cartilage was divided up the middle line with a knife. The two alæ were held apart, the interior of the larynx being thus thoroughly exposed to

# CASE II.—CHART 1.

Name—Mr. Y.

Tracheotomy.

Age—44.



Temperature Chart after Tracheotomy.

Tracheotomy performed 18 days before Laryngectomy.





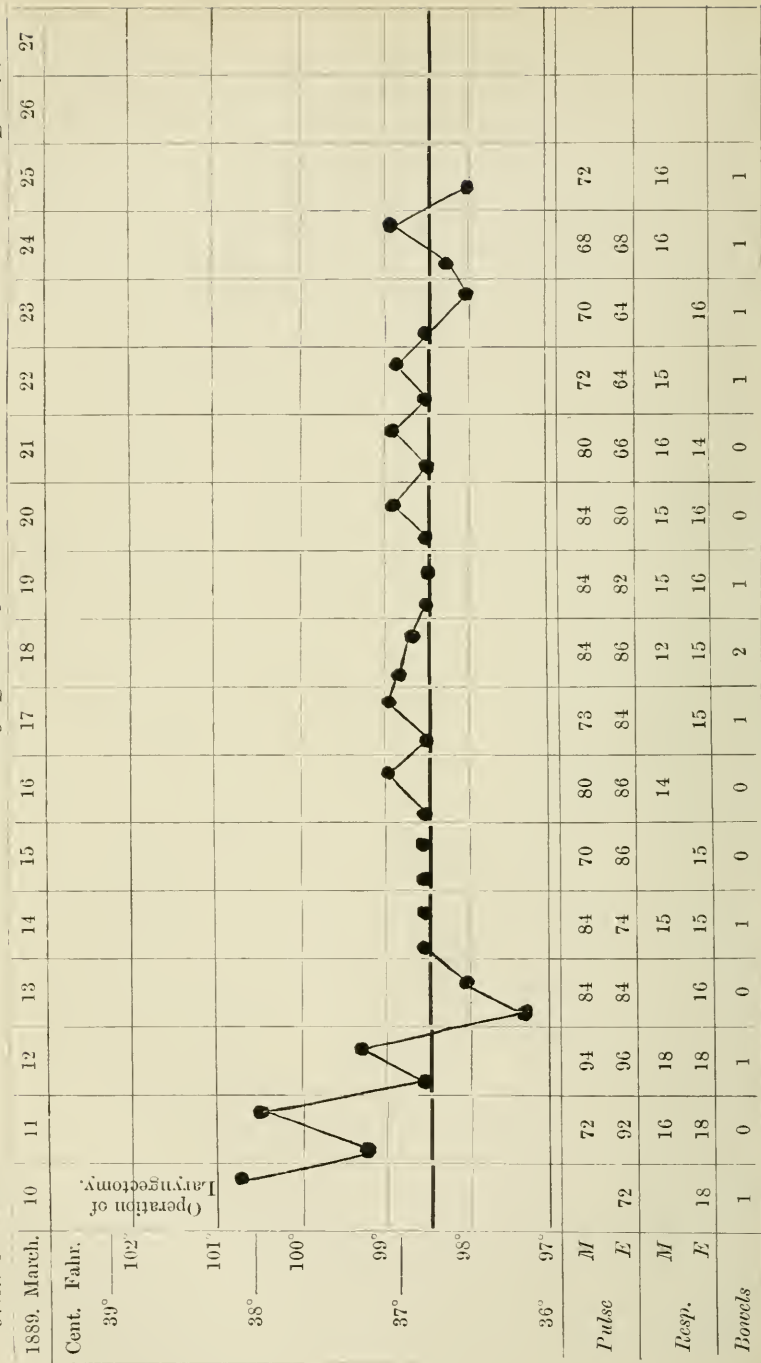


# CASE II.—CHART 2.

Name—Mr Y.

Laryngectomy.

Age—44.



Temperature Chart after Laryngectomy.

view. It was now seen that the tumour was growing chiefly from the inner aspect of the right ala of thyroid, from which it projected across the box of the larynx for nearly three-quarters of an inch. The tumour was also attached to the true vocal cords, the right being replaced by it. A small sponge was introduced into the lower part of the wound, so as completely to plug the trachea above the tracheotomy tube, and the right ala of thyroid with the attached tumour was removed by strong scissors. The other portions of the tumour were removed piece by piece, until a thorough removal of all the affected tissue had been effected. This necessitated the removal of nearly the whole of the left ala of the thyroid. Some cedematous mucous membrane at the upper part of the larynx simulated in appearance rather closely the new growth, and this in great part was removed. After careful examination this was believed to be merely cedematous mucous membrane, and the other portions of it were therefore not removed.<sup>1</sup> There was very little bleeding during the operation, and any that occurred was readily arrested by force-pressure and torsion. Some iodoform powder was dusted over the wound. A plug of aseptic gauze was inserted so as to close especially the upper tracheal opening, but otherwise the wound was left quite freely open. The operation from beginning to end lasted rather more than one hour.

*After-Progress.*—From half-past one to six o'clock in the evening the patient slept, breathing quietly and regularly, with the pulse strong and regular. At seven in the evening he was wide awake, and indicated that he felt very well. He had a very good night, sleeping for from half an hour to an hour at a time—four and a half hours in all. The tracheotomy tube required to be cleared every half-hour when he was awake. He had no pain in the wound except when he attempted to swallow. Suffered from very severe headache and great thirst. (See Chart 2 for temperature, etc.)

*March 11.*—Very well, not much pain; tube cleared every hour, slightly necrotic odour; wound dressed with sterilized gauze and boric acid powder. Still suffered from headache. Got enema of pancreatized milk,  $\frac{1}{2}$  pint. Chewed wet towel to allay thirst.

*March 12.*—Had good night—slept five hours. Discharge mucopurulent. No pain in chest, and no cough. Headache less severe. Passed œsophageal tube by mouth into stomach, and gave  $O\frac{1}{2}$  milk, with equal quantity of water and two eggs. Allowed him a little ice to suck. Repeated diet in the evening.

*March 13.*—Good night. Fed as before. No headache; no pain on swallowing.

*March 14.*—Slept seven hours. Same diet, +  $\frac{3}{4}$  j. whisky. Discharge very slight. Plug removed from wound altogether; cavity dusted with boric acid powder.

*March 15.*—In same condition. Tube removed from tracheotomy

<sup>1</sup> Microscopic examination later proved this view to be correct, while tumour removed was a well-marked epithelioma.

wound and cleaned. Whisky continued;  $\frac{1}{4}$  lb. extract of meat and gruel instead of eggs.

*March 16.*—Tracheotomy tube now introduced into trachea through laryngectomy wound.

*March 17.*—Been up for two hours. Is sleeping well; feels strong, and is very hungry.

*March 23.*—Patient to-day gave me following note:—"I have had a very good night—slept continuously from 10 P.M. till 2.45 A.M., and from about 3.30 to 7.45. I had to clear my throat only twice during the whole night, and the inside tube had not to be taken out at all. I feel strong and well this morning." The wound is contracting quickly. Dr M'Bride examined throat to-day; œsophagus a little œdematous, but the wound looks perfectly healthy. The patient swallowed some water to-day with ease, none coming through the wound. Patient's diet same as before, given three times daily through œsophageal tube.

*March 25.*—Swallowed some Brand's beef-jelly.

*March 31.*—Between 25th and this date been gradually taking more and more food without aid of tube. Very little passes into wound, and any that does is easily and at once coughed up. Has a little pain on swallowing; none at other times. Several attempts have been made to introduce large tube of usual form to prevent contraction of wound and allow after introduction of Foulis's artificial larynx, but irritability so great that patient cannot tolerate its presence. He can speak at present with a hoarse voice, audible at a distance of some yards.

The history of patient from the above date until he left Edinburgh was one of unbroken, continuous improvement. He gained weight, and improved in his general health, took long walks (on 20th April walked three miles without being tired), and altogether recovered in every way. Unfortunately, at no time could he bear the introduction of a tube through the upper part of the wound into the mouth, so that this portion of the wound gradually contracted, until in May his voice became almost wholly lost.

On 15th Sept. 1890 I received a letter from Mr Y., in which he states that he is in excellent health. Has had no pain nor discomfort of any kind. Is able for his new work, and can take active exercise without any trouble. He can speak in a hoarse whisper, which is intelligible to his wife and intimate friends.

*Remarks.*—There are some points in the two cases which I have detailed which I believe to be worthy of further remark.

In the first case we must note that the operation was a most extensive one, there being not only complete extirpation of the larynx, but also the removal of the upper portion of the œsophagus, and this in a woman worn out by a harassing illness, who only three weeks previously had undergone the severe and frequently fatal operation of œsophagostomy.<sup>1</sup>

Most surgeons are agreed that where tracheotomy is indicated as

<sup>1</sup> *Vide* Treves, Erichsen, Barker, etc.

a first step in an operation it is advantageous that it should be performed, as in Case II., some days before the major operation; but in this first case the tracheotomy was performed immediately before the laryngectomy—a disadvantage even greater in it than in many cases of operation on the mouth, as the two wounds were practically continuous, the posterior wall of the curved trachea being the floor of the upper wound.

Though the removal of the parts was extensive, there was no difficulty experienced in the operation, and for the first day or two the patient progressed most favourably. The cause of death was, as is so frequently the case, septic pneumonia, which probably came on at the third day, although only evidenced by physical signs on the fourth, and fatal on the twelfth. Recent statistics<sup>1</sup> of total extirpation show that the operation has been performed 138 times. Of these 138 cases, 36 have proved fatal during the first week, 14 more died before a month had elapsed after the operation, while only 17 patients survived for one year and upwards. Of the 50 patients who died during the first month, 32 were said to be cut off by lung complication; and it is generally recognised that, if the patient recovers from the shock of the operation, this complication is the chief source of anxiety, and the one most difficult to combat. It is in the majority of cases due to blood entering the trachea at the time of the operation, or to food and discharge from the wound passing in during the after-treatment. Trendelenburg's tampon or Hahn's sponge compress cannula<sup>2</sup> may be used to prevent the passage of blood into the trachea during the operation, but they are both rather difficult to manipulate, and frequently do not fit accurately. It is probably better to do as was done in Case II., viz., before opening the thyroid cartilage, stop all bleeding from the soft parts, then having divided the cartilage in the middle line, introduce a small sponge accurately into the trachea below the seat of disease and above the tracheotomy tube. This is a method very easy of application, and has the advantage that the plug is wholly under the control of the operator. Further, it is of great importance to keep the head well over the end of the table, as this extends the neck, thus giving more room for the operation, and at the same time helps to prevent the blood passing downwards into the trachea.

In the second patient the disease was much more restricted than in the first, as it was intrinsic and limited to the larynx. The condition was therefore in every way favourable for the proposed operation, and tracheotomy having been performed three weeks

<sup>1</sup> Sir Morrell Mackenzie.

<sup>2</sup> Henry Morris, in *Clinical Transactions*, London, vol. xx., relates a case where Trendelenburg's tampon had to be given up, and a sponge used instead; and in the same volume Semon gives a case in which Hahn was the operator, and the compress cannula signally failed. Semon points out that this was probably due to too little time having been given for the expansion of the sponge by absorption of fluid, and suggests what has been carried out by Butlin in two cases with success, that after its introduction into the trachea, ten or fifteen minutes should be allowed to elapse before opening the laryngeal box.



prior to the major operation, the case thus coincided with the rule formulated by Butlin,<sup>1</sup>—that “in the immediate future extirpation of the larynx for carcinoma should be practised only for intrinsic carcinoma which is still limited to the larynx, and that tracheotomy should be performed at least a fortnight or three weeks before the extirpation.” Hahn expresses very similar views.<sup>2</sup>

Chloroform was administered by a simple apparatus. A tube 18 inches in length was fitted to the inner tube of the tracheotomy tube, and a “filler,” covered with lint, adapted to its other end. The chloroform was then dropped on the lint, and the patient inhaled air saturated with chloroform. The only point to be attended to, other than when chloroform is administered in the usual way, is to hold the “filler” at a lower level than the tracheotomy tube, so that there is no risk of fluid chloroform passing into the trachea.<sup>3</sup>

The operation was easily performed; practically the whole of the thyroid cartilage was removed, a very small portion of the posterior edge of the left ala being left behind; the bleeding was readily controlled. The sponge introduced into the upper end of trachea acted most efficiently.

During the after-treatment the patient was fed by a tube passed through the mouth into the œsophagus. If at any time saliva or discharge from the wound passed into the trachea, the patient readily coughed it up through the tracheotomy tube.

Various forms of tracheotomy tubes were used during the after-treatment. Rushton Parker's fitted most comfortably, but unless *very* frequently cleared the mucus formed a thick, tenacious coating on the inner posterior part of the outer tube, opposite the deficiency in the inner, with the result that the latter could be withdrawn only with great difficulty and inconvenience to the patient. Bryant's tube was found to be comfortable, and to be most readily manipulated. Unfortunately, although several attempts were made to introduce a tube into the upper part of the wound to prevent its contraction, the patient was quite unable to tolerate its presence, and the endeavour had most reluctantly to be given up. The upper portion of the wound accordingly gradually contracted, and at last, although the patient could expire through it, whenever he attempted inspiration the opening completely closed, so that no air entered. The patient is now unable to articulate; but in this connexion it is interesting to note that recently two cases have been put on record in which, after complete extirpation of the larynx, and without the introduction of an artificial larynx, speech has been possible.

<sup>1</sup> Butlin, *Malignant Disease of the Larynx*, 1883.

<sup>2</sup> Hahn, “Ueber Kehlkopfexstirpation,” Volkmann's *Sammlung Klinischer Vorträge*, Nr. 260.

<sup>3</sup> This is a method which has been used by Professor Chiene since 1886 in all cases where tracheotomy was performed previously to major operations on the mouth, *e.g.*, excision of tongue and jaw. The late Dr David Foulis used a very similar plan, which has been adopted by Hahn, Semon, etc.—Dr David Foulis, *Lancet*, 1878.

# VIII.—CASE OF SUCCESSFUL LAPAROTOMY FOR TUBERCULAR PERITONITIS.

By A. G. MILLER, F.R.C.S.E., Surgeon to the Royal Infirmary, Edinburgh.  
(Reported by Dr D. A. CARRUTHERS, House-Surgeon.)

(Patient shown to Edinburgh Medico-Chirurgical Society, 4th June 1889.)

M. F., æt. 10 years, residing at Broxburn. Admitted to Ward XVII. on 10th February 1890, complaining of weakness, and pain and swelling in the left leg.

*History.*—On the 22nd January, three weeks previous, patient suffered from great pain in the abdomen, vomiting, and diarrhœa. These symptoms were attributed to some “dumplings” of which she had partaken the day before. The vomiting stopped the following day, the 23rd January; but the pain, though not so intense, and the diarrhœa continued. On the 29th January she began to complain of pain in her left leg. It was very painful at first, but after a time became easier, and she allowed it to become flexed at the knee.

*Previous History.*—Patient has always been a weakly child, and has had “runnings” from the side of the neck until quite recently.

*Family History* good.

*Present Condition.*—On admission patient was emaciated and in a very weakly condition. There were two or three scars on the sides of the neck, one of which was quite newly formed. Her left leg was flexed at the hip and knee, and there was a slight tendency to external rotation. There was considerable swelling on the anterior aspect of the thigh, extending from the knee for a considerable distance up the limb. On palpation distinct fluctuation could be made out in the swelling. There was slight tumidity of the abdomen, and diarrhœa; the stools were chiefly fluid or semi-solid.

*Diagnosis.*—Periostitis of the femur, with formation of an abscess, probably extra-periosteal.

*Treatment.*—On the 13th February Mr Miller cut down on the lower third of the thigh on the inner side, and opened into an abscess which extended upwards. He made a counter-opening about six inches above the original incision. On examining the bone with his finger, he found it was not bare. A drainage-tube was passed through from one opening to the other. Patient's temperature still continued high after the operation, and it was thought advisable to incise the periosteum; but on dressing the wounds two days after the operation, the bone was found to be bare at the lower part, and no further operation was needed. On the fourth day the tube was cut and a piece put in at each end. About ten days after the operation the lower tube was removed, and shortly after the upper. The lower wound healed in about three weeks, but the upper wound did not heal until the end of March.

The diarrhœa from which the patient suffered on admission continued unchecked after the operation on the 13th February, and resisted treatment by large quantities of lime water, etc. On the 18th February an enema was ordered daily, in order to clean out the lower part of the intestine and remove any fecal accumulation there. This checked the diarrhœa, and reduced the motions from four or five to two a day. The temperature began to come down and continue steady. The tumidity of the abdomen increased markedly towards the end of February, and the presence of fluid in the abdominal cavity could be easily made out. Examination by the rectum gave no cause for the diarrhœa, but showed protrusion downwards of the pouch of Douglas, as if filled with fluid. From these symptoms, together with the previous history, tubercular peritonitis was diagnosed, and permission was asked from the patient's friends to perform laparotomy.

On the 9th March there was considerable redness at the umbilicus, and protrusion of a part of the wall, which was reddened and about the size of a hazel nut. Fearing rupture through the protrusion, Mr Miller, on the 10th March, incised the swelling and allowed 18 ounces of thick greenish pus to come away. A large quantity of wood wool was put on; the dressing had to be changed twice during the night. On the following day the discharge was much less, and so little that in the afternoon a Friars' balsam dressing was applied, but the discharge came through this in a large quantity on the following day. The pus was not so thick as at first, but there was still a considerable amount.

*March 17.*—Mr Miller having obtained the parents' consent, performed a laparotomy in order to wash out the abdominal cavity. He made an incision in the median line about 3 inches in length, between the umbilicus and the pubes, and nearer the former than the latter. He dissected down and opened into the abdominal cavity at the upper part. He found the intestines considerably matted together, but made no attempt to undo any adhesions, whether between the intestines and the walls or among the intestines. The peritoneum was much thickened, and resembled the synovial membranes in a knee-joint undergoing gelatinous degeneration. The cavity was then thoroughly washed out with warm boracic lotion. Thereafter the wound was sewn up with five stitches. After the operation there was no rise of temperature until late at night, when it went up and continued high during the following day.

*March 18.*—Owing to the high temperature it was thought advisable to open up the wound and put in a glass drainage-tube. Immediately on opening there was a gush of fluid—dark coloured, sanguino-purulent—about 8 ounces in amount. After the tube was put in the temperature came down and continued down.

*March 21.*—As the wound tended to gape, and there was free communication with abdominal cavity, the tube was taken out.

The wound was filled with granulations, rather pale and flabby. As patient had had no motion of the bowels since the operation, an enema was given, which resulted in a stool in which there were some small fecal masses.

The wound continued to granulate, and on the 25th there was a level surface, with slightly flabby granulations. There was a tendency towards cicatrization at the edges.

*March 27.*—In order to bring the edges of the wound together, strapping was applied.

*March 29.*—When dressed the wound was found to have contracted considerably, and the granulations were looking much more healthy.

The wound continued to be dressed every second or third day, and on the 29th April was reduced to a mere line, with some exuberant granulations at the upper and lower part of the wound. Strapping was applied firmly, and the granulations were touched with bluestone. Patient was allowed up in the seventh week after the operation. The wound healed, and in less than a fortnight thereafter she was sent to the Convalescent Home at Gilmerton.

*Condition when Discharged.*—Patient was much stouter than on admission, and more healthy looking. The wounds in the left thigh were healed, and had been for more than a month. The wound in the abdominal wall was quite healed. The diarrhoea had ceased, and patient had one natural motion of the bowels daily. There was no symptom of any fresh outbreak of tubercular disease.

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## Part Second.

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### REVIEWS.

*Annual of the Universal Medical Sciences: a Yearly Report of the Progress of the General Sanitary Sciences throughout the World.* Edited by CHARLES E. SAJOUS, M.D., and seventy Associate Editors; assisted by over two hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-Lithographs, Engravings, and Maps. In 5 Volumes. Philadelphia, New York, Chicago, Atlanta, and London: F. A. Davis: 1890.

LAST August we pretty nearly used up adjectives expressive of admiration for the issue of this admirable work for 1889. The five noble volumes, well printed, lavishly illustrated, and splendidly indexed, which form the issue for 1890, certainly deserve every superlative that we have left unused.

Seriously, this *Annual* is a most valuable collection of all the cream of the medical literature of the world, arranged in the neatest



manner, selected with discrimination, and indexed in an absolutely perfect manner for ready reference. Eight hundred and fifty journals in all the languages of civilisation, and four hundred selected monographs and transactions of societies, have been laid under contribution. Each journal and monograph has its own number. The *Edinburgh Medical Journal* is 36, so when quoted space is saved by the number and date being printed thus:  $\frac{36}{\text{Aug. '90}}$ . The work is in itself, in small compass, the medical literature of the year. Each author or inquirer can in half an hour, by a judicious use of the index, find out all the important papers written on his special subject in 1889, with a brief digest of their contents. He can at once discover in what journal or book they appeared, and, with access to a library, can verify his references and follow out his inquiries. No public library should be without this work, and every medical man who really wishes to keep abreast of the literature of his day can do so for £3, 5s. per annum.

A liberal, far-seeing publisher, a most able editor, and an immense staff of sub-editors have made the result possible. In Europe we must own that we have nothing to equal this admirable piece of work. Influenza prostrated more than one-half of the editorial staff, so it is not to be wondered at that this year's issue is twenty days later than that of 1889.

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*Bacillary Consumption: Its Nature and Treatment in the True First Stage.* By HORACE DOBELL, M.D., etc. London: Smith, Elder, & Co.: 1889.

STIMULATED, on the one hand, by the cry of professional brethren who cannot wait till scientists settle the essential nature of any disease, but who must prescribe with present available lights, and on the other by the demands of the many-headed and much-suffering community of patients who naturally wish to be cured, the author of this treatise has set himself to answer those calls with respect to the true first stage of bacillary consumption.

The doctrine that the bacillus tuberculosis is the specific transferable element, capable of domiciliating itself in the organism and setting up the formation of tubercle, is accepted without reservation.

Chapter ii. details Baumgarten's well-known experiments on rabbit's eyes, and the author calls the interval between the introduction of the bacillus and the production of tissue-change thereby the *eventful interval*. Dr Dobell seems to think that this interval is the true first stage of bacillary consumption—at least when bacilli are forcibly introduced into healthy tissue and healthy animals. If spontaneously introduced, Dr Dobell thinks that they—the bacilli—will only thrive where they can find appropriate sustenance; and (page 60) he finds this pabulum is furnished by a “disintegration of proteids by oxidation *in situ*,” the digestive

and assimilative abnormalities which permit of this oxidation will therefore constitute the true first stage.

The author examines the various portals by which the bacillus may enter the organism,—the skin, the intestinal canal, the respiratory system, the genital portal. Possibly the importance of the first three of the modes of entrance as factors in the causation of “spontaneous” tuberculosis is over-rated by him and others, and very subsidiary to the part played by heredity. Nature possesses very effectual protective apparatus to prevent the entrance or annul the noxious powers of infective organisms which have gained admittance to the body. Isolated lymphatic glandular or bone and joint manifestations of tuberculosis cannot be easily explained on the supposition of infection from without. Possibly bacteriologists may yet be able to show that the “tubercular predisposition” is truly an intra-uterine or germinative infection, and that the bacilli (or spores of the same) are present at birth in the organism of those burdened with such predisposition. Is it a “predisposition” or the specific virus which is inherited in congenital syphilis? Why therefore deny it in tuberculosis, which is also an infectious disease?

In the chapters of this volume devoted mainly to treatment, the author’s abundant experience enables him to speak with confidence and authority; only the merits of some of the drugs mentioned should be accepted *cum grano*. With his excellently judicious remarks regarding the value and limitations of exercise we cordially agree, and his praise of riding is not a whit over-coloured. We have known a hard-working medical man of “tubercular predisposition,” with cough, hæmoptysis, and other signs pointing to phthisis, do his twenty miles a day on horseback, in all weathers and at all hours, get well and continue so during many years of such toil.

The volume is enriched by ample quotations from previous works of the author, and from those of other labourers in the same field, and to whom the just meed of approbation is awarded. An appendix contains several serviceable diet tables. In its earlier chapters the book contains a great deal of disputable matter. Its closely-reasoned theories, however, are advanced with modesty, and are evidently the outcome of much reading and much reflection on the part of the author, and are well fitted to rivet the attention and stimulate the thinking faculties of the careful reader.

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*On Bronchial Asthma: Its Pathology and Treatment.* By J. B. BERKART, M.D. Second Edition. London: J. & A. Churchill: 1890.

IN this book the author shows a great independence of traditional views. Rejecting the explanation of nervous spasms as insufficient, he maintains that the characteristic feature of the morbid lesion in asthma is its steady creeping along the surface and its tendency to

the formation of a specific product. It seems probable that this must be an agent that is capable of reproducing itself. Hence he favours the idea that the streptococcus erysipelatus is the cause of the progressive form of inflammation peculiar to bronchial asthma; but he admits that a similar form of bacterium is said to be a harmless inhabitant of the mouth in health. The inflammation is accompanied by a fibrous exudation which blocks up the bronchioles. The immediate cause of the dyspnoeal paroxysms is a transient stenosis of the main bronchi. That resolution is always accompanied by the appearance of sputum Dr Berkart regards as a proof of the correctness of his theory. "The inspiratory traction, by enlarging the thorax, rarefies the stagnant air behind the obstacle, and thus leads to an increased exudation of serum from the dilated vessels in the bronchial mucous membrane. There is, consequently, a *hydrops ex vacuo*, as it were, which, by the flushing of the tube, serves to remove the obstacle, which has hitherto resisted all mechanical pressure." The author believes that asthma is commonest in hot weather, and that there is no foundation for the current theory, that the abortive form of asthma commonly known as hay fever is due to the inhalation of the pollen of certain grasses. In like manner he doubts the influence of change of air or change of climate in curing asthma, and has little faith in many of the remedies usually prescribed for the disease. Lobelia he thinks a useless and dangerous drug; and he holds that the fumes of nitre paper or of stramonium and other ingredients in the cigarettes sold by the chemists act merely by the forcible cough which they excite when inhaled. It would certainly be difficult to believe that the relief sometimes proclaimed after their use was an entire illusion. For relief in the paroxysms Dr Berkart trusts most to the subcutaneous injection of morphia. Benefit is also derived from the administration of opium and chloral, though of course they act more slowly. Mustard leaves applied to the chest give a transient relief. He admits the benefit of ipecacuanha and tartar emetic as expectorants. Of the newer remedies of that class, Dr Berkart prefers jaborandi and pilocarpine. Aperients are beneficial in the intervals; and in the chronic form he insists on the value of absolute rest.

By the aid of his seven pages of lithographic plates, which are beautifully executed, Dr Berkart makes his views on the pathology of asthma very clear. Throughout the book we discern the marks of care and industry, and of a vigorous mind; but to give a proper appreciation of his views we would require to make an independent clinical and pathological study of the disease.

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*Syphilis of the Nervous System.* By H. C. WOOD, M.D., LL.D.  
Detroit, Michigan: George S. Davis: 1889.

THIS is a short and handy treatise, one of Series IV. of the Physicians' Leisure Library, published at the very moderate price

of 25 cents. It consists of four chapters which treat respectively of the Etiology of Nervous Syphilis, of the Brain and its Membranes, of Spinal Syphilis, and the Affections of the Peripheral Nerves.

The section on the pathology of brain lesions concludes with the following excellent observations on syphilomata:—"Syphilomata may produce softening and breaking down of the brain tissue by pressure upon the vessels or even upon the brain substance, but the softenings, the widespread degenerations of brain tissue which are so frequent in syphilitic subjects, are much more frequently due to disease of the bloodvessels, either alone or in connexion with syphilitic disease of the membranes. It must also be remembered that the peculiar degeneration described in the last paragraph, although more frequent in the large vessels, may occur in the smallest, and that a large or a small vessel so diseased is unable to exercise its function, and very frequently becomes the seat of a thrombus."

To those who desire to have the latest views on the pathology, symptoms, and treatment of nervous syphilis placed before them in an easily digested and concentrated form we would highly recommend this work.

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*Maladie de la Peau, dite Maladie de Paget. Contribution à l'étude des psorospermoses cutanées et de certaines formes de cancer. Par le Dr LOUIS WICKHAM, Ancien interne des Hôpitaux de Paris et de l'Hôpital Saint-Louis, etc. Paris: G. Masson: 1890.*

It is a graceful act in Dr Wickham, who spent a long time in the study of dermatology in London, and who visited Edinburgh specially to see for himself the mode of teaching pursued here, to devote his first effort on the large scale to an investigation into a disease which has been associated with the name of the greatest living British surgeon. The view which Dr Wickham takes of Paget's disease of the nipple is indeed a new one, but if finally established, is at the same time one which must modify considerably our notions with regard to cancer. Though unquestionably most common on the female breast, he shows that the identically same complaint may be met with elsewhere, and in other situations, manifesting the same characters. Further, he claims to have proved in the volume before us, that it is directly due to the presence and proliferation of a particular organism belonging to a class hitherto little studied. It has been known for some time that parasites belonging to the division of the protozoa called psorosperms or coccidia, and related to the gregarinæ, are occasionally found in the epithelial tissues of the vertebrata, but the idea that such were in any way connected with epithelioma is quite a recent one. It is therefore in the highest degree important that all the facts upon which such an opinion is based should be placed at as early a date as possible before the profession in a concise and accurate form. This is what Dr



Wickham has done, and well done, in this exhaustive work, which, whether the theory therein sustained eventually stands or falls, will hold its own as a classical contribution to medicine. The history of the affection, from the time when Sir James Paget first drew attention to the fact that a chronic disorder of the integument of the nipple and breast in females was followed in time by cancer of the organ itself, down to the present day, is fully detailed, the clinical description is graphic, and the elements of diagnosis laid down so clearly that an error is scarcely possible after a careful perusal. The pathology of the ailment, on the assumption that it is of parasitic origin, is, as might be expected, given at great length, and is illustrated by a series of microscopic drawings of real excellence. One is astonished after inspecting these, that objects so remarkable as the bodies which he, and we must add M. Malassez, and M. Balbiani also regard as psorosperms, could have for so long escaped recognition as such, if they are so in reality. So far inoculations into the tissues of rodents, and into the skin of Dr Wickham himself, have failed to produce any effect, nor has cultivation on moist sand led to any decisive result. Perhaps too much stress must not be laid on either of these, however, for we yet know so little about the conditions under which these organisms live and develop, that we cannot afford to be hypercritical. The publication of this volume is evidence how earnestly France is striving to regain her lost position with respect to dermatology, and we will be much surprised if in the future Dr Wickham does not give most valuable aid in the effort to re-establish it.

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*Heredity: a Study; with Especial Reference to Disease.* By R. A. DOUGLAS LITHGOW, LL.D., M.R.C.P., etc. London: Baillière, Tindall, & Cox: 1889.

THE interest connected with this subject is great; but the facts collected are not yet susceptible of a scientific explanation. We know that minute and trifling peculiarities, such as a white tuft of hair on the head, sometimes pass down through many generations, as well as more important idiosyncrasies—such as tendencies to tuberculosis or gout, and a proclivity to insanity or suicide; but why all potentialities and liabilities should inhere in the spermatic fluid or germ cell is one of the mysteries of Nature. Hence the collection of ancestral peculiarities and diseases is little more than an effort of observation and literary search. Dr Lithgow presents us with much that is known of normal and morbid heredity. He tells us in his preface that he has preferred “to quote from the greatest authorities” than to detail the facts in his own words, “thus presenting a picture in which the lights and shadows have been added by the great masters to the sketch of the student.” This may be held to be an admission that he has little original to offer. Though there is a considerable collection of facts, the whole field of our

knowledge on this subject is far from being covered. The work is especially defective in the department of nervous and mental diseases, which furnish some of the strangest facts in heredity.

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*A System of Practical and Scientific Physiognomy; or, How to Read Faces.* By MARY OLMSTED STANTON. Philadelphia and London: A. Davis: 1890.

Is it necessary to teach the principles of physiognomy that one must fill two large 8vo volumes? In one place the authoress tells us that the book is not large enough, and that much more might have been written; but on examining the contents, one finds that much of the 1230 pages is taken up with remarks upon multifarious subjects connected with human nature which the reader could quite well have spared. If passing over this irrelevant commonplace, we seek to appreciate the real information in the book, we find a large number of statements as to the indications of character afforded by outward appearances. These are stated with seeming scientific exactness. The form of the lips, the eyes, the forehead, the ear, the hand, the neck, and other traits are described and their expression analyzed. The statements in the texts are illustrated by 380 woodcuts, which are in general well chosen, and some of which show much power of expression. We are inclined to think a good deal might be made out of physiognomy by an able and persevering observer. Certain mental and moral qualities are often co-related with a certain form of the bodily frame, especially of the head and face, and the indulgence in certain tastes and propensities in the end modifies the organism, leaving lines in the face which close observers may be able to decipher. Hence the physiognomy of middle-aged people is easier to read than that of young people. There is no doubt that the habitual criminal has a physiognomy of his own, partly born and partly acquired. Civilisation teaches us to suppress as much as possible all signs of emotion. This naturally does not please Mrs Stanton, though she grants it is a good accomplishment in a physician. The different indications given by the form of the features and lines of the face have their significance as indicating the probability of certain accompanying mental characteristics, but their exact value has never been determined with anything like scientific exactness, and probably could not be so, for though it seems probable that a man by intense study and observation may gain the capacity of making very shrewd guesses at character through physiognomy, much of his experience would be too fine to be communicated to another person in a book.

Mrs Stanton has taken some advantage of the views stated by her predecessors, especially Lavater and Dr Cross. We can find no mention of Dr Joseph Simms, whose *Physiognomy Illustrated* has gone through eight editions. It is full of shrewd, though whimsical remarks. In Mrs Stanton's book we find one trait of Dr

Simms' in the use of strange expressions for assumed qualities, such as bibativeness and pneumaticiveness. These are all explained in the end in a glossary. The book shows a considerable amount of reading and information; but, as might be expected in such a wide compass, there are occasional inaccuracies, for example, when we find that self-esteem is rated small with Cicero, and the power of language great with John Hunter, we feel inclined to doubt both the knowledge and skill in physiognomy of the authoress. Works like this have a certain interest to people of an observing turn of mind, and could Mrs Stanton have got her book into one volume, we think it might have secured considerable circulation.

## Part Third.

### MEETINGS OF SOCIETIES.

#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

##### SESSION LXIX.—MEETING X.

*Wednesday, 7th May 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

##### I. ELECTION OF ORDINARY MEMBER.

The following gentleman was elected an ordinary member of the Society:—William Guy, L.R.C.P. & S. Ed.

##### II. EXHIBITION OF PATIENTS.

1. *Prof. Chiene* showed—(a.) A case of OLD DISLOCATION OF THE HIP-JOINT INTO THE SCIATIC NOTCH. Patient was a young man, æt. 23, and met with the injury in April 1889. On December 4, 1889, after his admission to the Infirmary, reduction under chloroform was attempted. When this failed, an incision was made and adhesions cleared away. The acetabulum was, however, found filled up, rendering reduction impossible. On January 8, 1890, the head of the femur was removed, and extension applied until there was practically no shortening. After January 17 progress was slow and the patient was much troubled with pain down the sciatic nerve. On the 21st passive movement was begun, and the power of voluntary movement was gradually regained. He was discharged on March 25. (b.) A man, æt. 42, who had suffered from BRAIN COMPRESSION, the result of injury, which occurred on February 1, 1890. He was admitted on February 6, with twitchings on the left side of the face, and a spastic condition of the arms, especially the left. Trephining was performed on the 10th, after which the twitchings diminished, and none were observed after the 18th. The opening was made over the junction of the middle and lower thirds of the fissure of Rolando on the right side. The

dura mater was opened, and about half an ounce of clotted blood escaped. The case was one of laceration of the brain substance, slight at first, but increased by the continuance of the hæmorrhage. He was dismissed on March 13, cured.

2. *Mr A. G. Miller* showed a child who had suffered from DISLOCATION OF THE HIP, caused by disease. The head of the femur, which was carious, was removed, with a successful result. See description of case on p. 117 of this Journal.

### III. EXHIBITION OF SPECIMENS.

1. *Prof. Chiene* showed — (a.) A TUMOUR removed supra-pubically, on January 29, 1890, from the anterior wall of the bladder of a man, aged 28. The wound healed slowly, and the patient was dismissed cured on March 20. (b.) Three URINARY CALCULI and MIDDLE LOBE OF PROSTATE, removed supra-pubically from a man aged 72, on February 24, 1890. Healing went on favourably, and the patient was dismissed cured on 31st March. (c.) Schall's CHLORIDE OF SILVER BATTERY, for use with the cystoscope.

2. *Dr John Duncan* showed the HEAD OF THE FEMUR, removed from a case of spontaneous dislocation of the hip two or three years ago.

### IV. ORIGINAL COMMUNICATIONS.

1. *Prof. Chiene* read his NOTE ON LAMENESS AFTER HIP-JOINT DISEASE, which appears at page 218 of this Journal.

*Dr John Duncan* said the instrument to which Mr Chiene had referred was constructed by one of his clerks, Mr Galley, as an improvement on the three pieces of wood which he was formerly in the habit of using. It fulfilled its purpose well. Mr Chiene's cases were interesting examples of departure from the typical deformities of hip-joint disease. All these deformities of diseased strumous joints were primarily due to muscular effort, voluntary or involuntary, to maintain the part at rest. The special posture of each joint was involuntarily determined by the balance of forces, and the extreme degrees were brought about by the fact that the tissues, which happened to be stretched, gradually elongated, and the balance had to be ever continuously readjusted in consequence thereof. When voluntary muscular effort came in it produced modifications, of which, as it appeared to him, Mr Chiene's cases were striking examples of great rarity, arising no doubt from the fact that the patients, having early discovered, had persistently maintained a position of ease not in accordance with preponderating muscular mass.

*Mr Cathcart* believed that the deformity in cases of hip-joint disease was at first produced by muscular spasm reflexly excited by the disease. The reflex effects might be prominent, while the disease causing them might be in itself inappreciable; just as prominent bladder symptoms in children might be caused by an



adherent prepuce which otherwise gave no trouble, or as fits might result from rectal thread worms. Tubercular disease, as for instance in the vertebral column, might go on so insidiously that angular deformity, accidentally noticed, might be the first and for long the only symptom. Hence he would be slow to exclude real disease in these cases of Prof. Chiene. He had often seen children brought into the surgical waiting-room, not for pain in either hip or knee, but for deformity, which really hip-joint disease had produced. He believed that there was a physiological association between joint nerves and joint muscles, and that the joint deformity was partly at least due to the particular joint nerves involved in the disease.

*Dr Hughes*, in explanation of the deformity in the second of Prof. Chiene's cases, in which there was simple abduction, begged to suggest that it was probably a case in which resolution had occurred at the end of the first stage of hip disease. During the first stage there was abduction and eversion, the eversion being probably due in part to the contraction of the ilio-psoas, and the external rotator muscles which lay in close contact with the capsule of the joint and were probably irritated. Dr Hughes suggested that the rotator muscles probably became tired out and exhausted at the end of the first stage of the disease, and that ankylosis had set in before the limb had changed from the abducted into the adducted position, as usually occurred during the second stage of hip disease. As to the third case, Dr Hughes thought that the rigidity of the lumbar spine in this patient, who was 18 years of age, might account for the want of rotation,—as in a younger patient, in whom the spine was not so rigid, rotation would probably occur. Dr Hughes thought that in using the instrument shown by Prof. Chiene for determining the obliquity of the pelvis there might be some difficulty in steadying the spirit level, as it was placed in contact with two movable bodies,—viz., surgeon and patient, and that some modification of Mr Barwell's scoliosis gauge, with a horizontal bar movable on an upright, which was fixed to a pedestal, would serve equally well, and be more easily applied.

2. *Mr A. G. Miller* read his paper on the TREATMENT OF FLAT-FOOT, which appears at page 221 of this Journal.

*Professor Chiene* congratulated Mr Miller on the paper which he had just read. He believed that with regard to the anatomy of the arch of the foot, the tibialis anticus and peroneus longus muscles were also stretched. A figure-of-8 elastic bandage attained the object which Mr Miller desired, namely, to elevate the inner edge of the foot. In painful cases Mr Chiene had found great assistance from a rigid arch, which gave rest to the tarsal joints, and relieved the irritation at the inferior calcaneo-scaphoid ligament, in the same way that relief was given in painful cases of

disease of the first metatarso-phalangeal joint by a rigid piece of metal placed between the layers of leather in the sole of the boot.

*Dr Hughes* remarked that there was one statement made by Mr Miller with which he could not agree, viz., that the weight of the body was transmitted from the tibia through the astragalus to the calcaneo-scaphoid ligament, which was thus very apt to give way. In the normal position of the foot with the toes pointing forwards, the weight was transmitted from the astragalus mainly to the os calcis and thus to the ground, and that the greater part of the weight of the body was borne by the outer part of the foot, os calcis, and cuboid, while the inner segment of the arch formed by the sustentaculum tali, scaphoid, and calcaneo-scaphoid ligament were concerned in affording elasticity to the foot rather than giving support. If, however, the toes and the anterior segment of the foot were turned outwards, then the relations of the astragalus to Meyer's line and of the tibia to the plantar arch were so altered as to direct the weight on to the arch instead of the os calcis. This probably explained the frequency of flat-foot in soldiers, and accounted for the great difficulty experienced during long marches due to foot-soreness, as in the military position of attention and during marching the toes are turned outwards. As to the boots mentioned by Mr Miller, *Dr Hughes* stated that, from personal experience of a large number of cases in Mr Thomas's practice, he could speak highly of the efficacy of the wedge-shaped sole, by which the weight of the body is thrown towards the outer side of the foot, and the structures on the inner side being thus relieved from pressure, in painful incipient cases the relief afforded, he stated, was very marked. *Dr Hughes* thought that some provision should be made for the support of the transverse arch of the foot, which also gave way, due, probably, to a weakening of the peroneus longus which occurred in the early stages, and to afford this support the inner sole and welt should be convex from side to side instead of being concave as usually worn.

*Dr James Ritchie* thanked Mr Miller for his lucid exposition of the mechanism of the production of flat-foot, an affection interesting to the physician as well as to the surgeon. He agreed with Mr Miller that as a curative agency muscular exercises were of most importance. With these he conjoined local stimulation—friction and daily bathing with cool salt water. Although some patients could not wear the pad, others found it very beneficial. The speaker used with it a thin arched metal plate (not so long as to interfere with the metatarso-phalangeal joint of great toe) in order to prevent the thin-soled boots of ladies from being distorted by the pad. He cautioned his patients against much standing. He agreed with what *Dr Cotterill* had said regarding hallux rigidus; the first stage in its production was a measure of flat-foot, and he found it to be much benefited, specially in the early stages, by tip-toe exercises regularly performed.

*Mr Miller*, in reply, said that there were many important points in connexion with flat-foot on which he had not touched in his paper, because he wished to concentrate attention on the calcaneo-scaphoid ligament. He knew that there were many other structures to blame, especially the muscles, for the production of flat-foot, but, at the same time, he believed that the calcaneo-scaphoid ligament was the key of the position. He considered that when the important part played by that ligament was borne in view, the suitable treatment would be plain. He quite agreed with much that had been said in the discussion, especially as to the importance of the peroneus longus in maintaining the transverse arch of the foot, and the great harm, on the other hand, that often resulted from improper turning out of the foot in walking. He still thought that a pad inside the boot did more harm than good in many cases, and was strongly of opinion that exercising the muscles of the leg, especially in incipient cases, was the most useful method of treatment. *Mr Miller*, in conclusion, thanked the Society for the kind manner in which they had received his paper.

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## OBSTETRICAL SOCIETY OF EDINBURGH.

### SESSION LI.—MEETING X.

*Wednesday, 16th July 1890.*—*Dr BERRY HART, President, in the Chair.*

I. *Prof. Simpson* showed a specimen which he had received from *Dr Robert Wise* of Kendal. It consisted of a PREMATURE STILL-BORN FÆTUS, which had presented by the shoulder, and which had been expelled spontaneously. The placenta was partially prævia.

II. *Dr Haig Ferguson* exhibited—(a) a MULTILOCULAR OVARIAN TUMOUR, which he had removed some time ago. The tumour presented the ordinary characteristics of such growths. The clinical history of the case was of some interest, as the patient, an unmarried woman, sought medical advice for abdominal pain, and not for abdominal swelling, although the tumour nearly filled the abdominal cavity. Her menstrual periods were profuse, and very frequent. On examining the abdomen there was no difficulty in diagnosing the tumour, and making certain of its ovarian origin after a vaginal exploration. The interesting point was that the patient complained of great pain when the abdomen was palpated, and distinct friction fremitus could be felt during each respiration, while friction could also be heard on auscultation. The patient had felt the pain for some weeks. When she was put to bed the temperature was found to be raised three degrees, and the question came to be, Should the operation be delayed till the peritonitis had subsided and the temperature had fallen, or should it be done at once? *Dr Ferguson* inclined to the latter view, as he feared the formation of difficult adhesions after the subsidence of the inflam-

mation. He accordingly operated at once, and found that there were no adhesions. The serous covering of the tumour anteriorly was much congested and covered with innumerable highly injected spots, and the apposed parietal peritoneum was in the same condition. There was no twisting of the pedicle. The tumour was easily removed, and the patient made an uninterrupted recovery. There could be little doubt that had the operation been delayed till the feverishness had subsided, numerous adhesions would in all likelihood have formed, which would have rendered the operation much more dangerous and difficult. (b) The OVARIES and FALLOPIAN TUBES, which he had removed by abdominal section about three weeks ago, from a patient who had suffered for many years from severe premenstrual pain, which had resisted all ordinary treatment. The patient was married and sterile. She likewise had an interstitial uterine fibroid, about the size of a three months' pregnancy, which for the last two years had been the cause of steadily increasing menorrhagia and metrorrhagia. Her strength was thereby greatly reduced, and to add to her complications she suffered from cardiac dilatation with mitral incompetence. She was still far from the menopause, and in order to prevent her rapidly failing health from altogether giving way with the pain and hæmorrhage, prompt treatment was called for. No difficulty was experienced in the removal of the appendages, and the patient has made an excellent recovery. The Fallopian tubes were greatly congested and tortuous, and one of them had a double fimbriated extremity, showing congenital malformation.

III. *Dr Armour* exhibited for *Dr Halliday Croom*—(a) Two PAPILLOMATOUS CYSTS OF BOTH OVARIES, from a case operated on by *Dr Croom* on the 11th inst. The interesting point about the case was the fact that the patient came to the ward in April last, and was found then to have a fibroid tumour of the uterus, about the size of a five months' pregnancy. She was at that time after examination sent home as unsuitable for operation. A few weeks ago she returned, and was found to have in addition to the fibroid the tumours shown, along with copious ascites. The operation was easy and successful. (b) Two GALL-STONES from a case in which *Dr Croom* performed cholecystotomy. The gall-bladder was small and contracted, and the case could not have been diagnosed had it not been for the recurrent attacks of severe biliary colic and evanescent jaundice that were present. It is noticeable that, though only two stones were found, each of the stones had numerous facets.

IV. *Dr Underhill* exhibited a specimen of RUPTURED UTERUS. This specimen was obtained from a case which occurred in the Maternity a month since. On discovery that the uterus was ruptured, *Dr Underhill* determined to perform laparotomy. With most valuable advice and assistance from *Prof. Simpson*, he opened



the abdomen and removed the foetus and placenta from among the intestines. Finding that the tear in the uterus extended from near the origin of the left round ligament to beyond the middle of the cervix, he sewed up with catgut the lower part of the tear, then passed an elastic tube round the upper part of the cervix, and passed two knitting pins through it at right angles, in the manner employed by Mr Lawson Tait. The uterus was then cut off, the abdomen very carefully cleansed with boiled water and sponges, and the incision sewn up. There was some rise of temperature for the first three days, but the woman had now recovered. The stump came away on the seventh day.

V. *Dr Haultain* read his paper on SOME POINTS ON THE MORBID ANATOMY OF THE FALLOPIAN TUBES, which will appear in a future number of this Journal.

*Dr Underhill* thanked *Dr Haultain* for his valuable and instructive paper. It was a subject which was not very familiar to most of the Fellows, and which had hitherto been treated in rather a fragmentary and spasmodic fashion. *Dr Haultain's* observations of the curling and angulation of the tubes as a primary condition on which many of the pathological results with which we are familiar depend, was of great interest and value as bringing the subject into a more homogeneous and satisfactory whole. His theory of the curling being dependent mainly on a subinvolution of the uterus, was well supported by the fact that so many of the diseases of the female pelvic organs were found to follow a first pregnancy, whether that pregnancy came to a natural end, or was broken by miscarriage at an earlier period. The dependence of other cases of tubular disease upon gonorrhoea was another point of interest which accorded with the views of other authors.

*Professor Simpson* wished also to express his high appreciation of the value of *Dr Haultain's* communication. It presented in a very clear and convincing form a series of observations in regard to tubal disease that were of extreme importance. As *Dr Haultain* had said, tubal pathology was a subject of very recent development, and it was by such investigations as he had carried out that true advances were to be made. Some of the cases he had adduced went to confirm the interesting observations of *Professor Freund*, who had pointed out the influence of the sinuosities remaining from foetal development on the production of tubal disease. With regard to the angulation taking place entirely within the peritoneal investment, it would be necessary to make quite sure that at some of these angles inflammatory adhesions of the opposed serous surfaces had not taken place, and an adhesive band come to assume the appearance of the original perisalpinx. The concise clinical history of several of the cases added greatly to the value of this interesting paper.

*Dr Ballantyne* had listened with great interest to *Dr Haultain's*

original contribution to the subject of the pathology of the tubes, and in most of the points noted his own observations confirmed those of Dr Haultain. He did not, however, think that it had been proved that the sinuosities of the adult tubes were due to a persistence of the tortuosities of the foetal, for the latter were strikingly uniform in form and size, whilst the former were irregular, both in shape and size.

*Dr Armour* asked Dr Haultain whether, in any of the cases in which he had found a condition which he considered one of subinvolution of the tubes, he had also found a condition of subinvolution of the uterus?

*Dr Haig Ferguson* thought that as development proceeded, the convolutions of the foetal tubes underwent a process of gradual and somewhat irregular unfolding. This in certain pathological conditions took place *very* irregularly, and would thus account for the extremely unequal sinuosities so constantly observed in congenitally diseased tubes.

*Dr Berry Hart* considered Dr Haultain's paper interesting, but thought he attached too much importance to the angulation of the tube.

*Dr Haultain* thanked the Society for the manner in which they had received his paper. As to the remark of Professor Simpson concerning the dipping of the peritoneum into the angles formed by the sinuosities of the tubes, he had studied that question particularly, and maintained that it did not do so. He had come to this conclusion, firstly, from the fact that microscopic examination showed no peritoneum immediately surrounding the tube; and, secondly, that in cases of slight twisting, the peritoneum could distinctly be seen to run smoothly over the tube, and not to dip into the angles; while, lastly, it did not obtain in the foetal condition. He agreed with Dr Ferguson that the foetal tubes became gradually irregularly straightened, and this accounted for the irregularity of the contortions in the congenital cases. Those cases he had examined which occurred after labour were generally, but not always, associated with subinvolution of the uterus. Dr Hart, he thought, must have misunderstood what he said about thickening of the tube. Tubes which were contorted and angulated were seldom thickened, they were as a rule, as far as could be made out, normal in structure. The tubes which became thickened were generally patent, and therefore not angulated, and, doubtless, in these cases micro-organisms might participate in the thickening process. When an angulated tube became involved in secondary inflammation it tended to become dilated from retention of secretion, and therefore its walls were much attenuated instead of thickened.

VI. *Dr Ballantyne* read the following letter from Dr E. G. Pilgrim, containing an ACCOUNT OF A CASE OF DECAPITATION BY CORD FOR IMPACTED TRANSVERSE PRESENTATION:—

Dear Sir,—At the suggestion of Prof. A. R. Simpson, I am happy to send you a few notes of a somewhat remarkable case conducted successfully by my fellow-graduate Dr E. W. R. Branch, Govt. Med. Officer of the Island of Tortola. He writes that he was knocked up one night at 3 A.M. by a midwife from the neighbouring Danish island of St John's, imploring him to come over and help a woman who had been in labour nearly two days, the child's hand having been seen at the vulva since 6 A.M. the previous morning. Suspecting a neglected transverse presentation, he gathered up such few drugs and instruments as he had with him and prepared to go. To give his own words, he started with her at once in a miserable leaky little rowboat, 10 ft. long, with three men besides himself and midwife. He arrived after three and a half hours' pull in the darkness. Then had to ride  $4\frac{1}{2}$  miles over broken tracks.

The woman was lying on the floor howling. He hoisted her on to a bed. "Right arm of child was sticking out past elbow, and had been so twenty-four hours—a perfect jam; neglected transverse, left dorso-anterior. No fetal heart heard. Mother had felt no movement for hours. Uterus moulded over child; near bursting, I think. Anterior vaginal wall all prolapsed; everything prolapsed except child. Cord partially prolapsed. It was her twelfth labour.

"I promptly gave her a *deep* dose of chloroform, and, more as a matter of form than anything else, tried internal version, but immediately abandoned the attempt. The jam was absolute, the very rectum seemed choked, and I had grim visions of Bandl and the 'lower uterine segment.' 'Divide et impera,' thought I; but, alas! wherewithal to divide? I had a vague recollection of having heard somewhere that thick twine would do. Happy thought! They are jolly fisherfolk these people, and I shouted, 'Get me a fathom of stout tow-line.' It was produced with military alacrity. I then groped for and found the child's neck; and tying one end of the cord loosely around the third finger of my left hand, I pushed it up with the cord trailing along my palm, until I got the finger well around the neck. I then gradually slipped the end of the cord off my finger, and worked it round the neck until I could seize and pull it down, enclosing the neck in a loop, both ends of the cord being out at the vagina. I then breathed, and thought to myself that something was going to happen—either the cord or the child's cervical vertebra would be the stronger. I then put in a Sim's speculum to save the vagina, and, seizing one end of the cord in either hand, I sawed away. Presently the loop of the cord came out with somewhat of a jerk. It had not burst. I knew I had divided that child. Once more I breathed, then seizing the child's arm I gently delivered the body. It slid out like an eddoe, with the head taken off as smoothly and as beautifully as the daintiest executioner could have desired. I do

not think I shall ever use anything else but fishing-line in such a case; it answers splendidly, and with very little manipulation I think you could always get it round the neck. The speculum in the vagina is necessary, however, or it would get cut by the cord.

"After that I left things alone, and the head was expelled about ten minutes later; then the placenta and membranes followed entire, and when I left the woman, she was quite easy (bar good pains), and uterus as firm and hard as her husband's skull. There was hardly any bleeding. I told the nurse to look out for fever and to use carbolic injections. The prolapse was very troublesome, as with every after-pain it came down again. However, we fixed it up in a fashion. Got home 4.30 next day, and had breakfast and dinner all in one. I hope I have not wearied you with all this, but it really was not a bad case for my first."

I think, Mr Secretary, you will admit that Dr Branch's humour is as remarkable as his ingenuity. I think, too, that you will admire, from many points of view, the singular discretion with which he left the birth of the head to Nature, and, indeed, throughout exercised the very smallest manual interference consistent with the purpose he had in view.

I have gathered from the general tone of his letter that this method of division of a fœtus has many advantages. First, he assures us that its adjustment is by no means difficult. Second, that it performs the work with amazing swiftness,—more swiftly, indeed, than ordinary chain-saws would perform it. The cord (which, I may remark, might be made of antiseptically purifiable silk) is, in truth, a *saw*. The fine serrations and spirals of its strands, presenting, as they do, an irregular continuity, act like so many excessively fine and numerous teeth in their frictional slide over the tissues. Furthermore, the perfect flexibility of the cord insures such perfect adaptation of its grip, that every point of it acts upon every point of tissue with maximum frictional efficiency. Third, its safety to the mother is remarkable. The protection of the vagina by the speculum is a valuable hint in this connexion. But most important of all is the harmless smoothness of the divided surfaces; no jagged edges, no spicula of bone are here possible. The surfaces are, as it were, planed and polished with sandpaper. No unyielding, hard-pointed instruments are introduced, nothing but the finger tips and the cord. And when one considers the probable condition of the lower uterine segment in such a case,—the possibility, indeed, that that segment is little more than a peritoneal envelope, that partial ruptures may have already begun, that the parts are devitalized and exhausted, and sepsis on their very threshold, in fact, that the life of the mother may, for all that we can know, depend, perchance, on the unbroken continuity of a mere peritoneal endothelium,—one can easily realize how paramount it is that the methods of interference be those of the very gentlest solicitation, and how extremely dangerous might be



the opposites hereof. In this connexion, too, you will admire the *deep* anaesthesia which, in true loyalty to Edinburgh and Sir James, Dr Branch was wise enough to insure.

Trusting, Sir, that this case, although in no sense miraculous or amazing, may yet possess some slight interest for you, and feeling, at least, that the members of your learned and honourable Society, many of whom are gratefully admired old teachers of Dr Branch (yourself included), may view with some little Edinburgh pleasure and pride the successes of so recent an alumnus, I am, dear Sir, yours respectfully,  
EUSTACE GRAHAM PILGRIM, M.B."

*Dr Underhill* welcomed Dr Pilgrim's paper as a pleasant change. He had never listened to a paper where the humorous played so large a part, while at the same time there was good practical common sense behind it. He had seen it stated that cases of impacted shoulder presentation might be relieved by placing the patient in the genu-pectoral position, which carried the shoulder out of the pelvis into the abdominal cavity and relieved the impaction. It would be worth trying in such a case as Dr Branch had related.

*Professor Simpson* thought it was doubtful whether placing the patient in the genu-pectoral position would have been helpful in such a case as that of Dr Branch, where the waters had long escaped, and the uterus was collapsed closely round the outline of the child. The idea which Dr Branch had so happily applied in practice had, doubtless, been suggested to him by what he had heard of Pajot's decapitator. As most of the Fellows knew, this consisted of a long rod, curved near the end and hollowed to carry a cord attached to a bullet. The bullet was pushed round the neck of the infant till it could be laid hold of by the operator's finger, and as the hook was withdrawn, the decapitating cord was left encircling the neck. Fortunately for Dr Branch, in his case the neck was so far driven down that without any special instrument he had succeeded in cleverly carrying the line round the neck; and though the history had been given in the familiar form of a letter to a friend, he (*Professor Simpson*) thought it well worthy of a place in the Society's Transactions.

VII. *The President* read his NOTE ON THE DEFINITION OF THE TERM "POSITION," which appeared at page 229 of this Journal.

*Dr Milne Murray* was scarcely prepared to admit that the new nomenclature suggested by the President in his paper was necessary, nor that it simplifies matters for the student in any great measure. He thought it was not necessary nor was it advisable to define "position" in terms of the mechanism of labour. Position was a matter of diagnosis, and from it we could form in some measure a prognosis, but it ought to be determined in relation to the pelvis, and not to the process of labour. Further, he thought that there was often in text-books and lectures an attempt to define

the relation of the head and pelvis with too great accuracy, as if there was an invariable relation between a given point of the head and a given point of the pelvis. He had been accustomed, in defining position to students, to divide the pelvic brim into four quadrants, marked off by the intersection of the conjugate and transverse diameters. Thus two of the quadrants were anterior, two posterior, two were right, and two were left. Position was accordingly determined by the relation of the denominator of the presentation to one or other of these quadrants. Thus, if the occiput lay anywhere in the left anterior quadrant, we had an L.O.A.; if the sacrum lay in the right posterior quadrant, we had an R.S.P., and so on. He had never found that the student had any difficulty in grasping these relationships, and it enabled us to employ a common system to all the presentations. It further avoided the error of implying that position was a matter of fixed relationship between two points—one of the head, and one of the pelvis.

*Professor Simpson* had heard Dr Hart's suggestions to-night for the first time. He was no way indisposed to the adoption of any new definitions that would help to clearer understanding of the process of parturition. He doubted, however, whether much would be gained by accepting Dr Hart's nomenclature. The chief objection the President had adduced to our present method was the seeming contradiction of terms in speaking of the relative frequency of the face positions. But it was quite easy to make students apprehend that in the most frequent of the face positions the direction of the child's back was precisely the same as in the most frequent of the vertex positions, though in regard to the mechanism the movements were precisely the reverse—extension in face cases taking the place of the flexion of vertex cases as the first movement; the back of the child turning backwards instead of forwards in the rotation movement; and so on. As the chin had to come under the arch of the pubes in normal face cases, it was best to retain it as the denominator. Dr Milne Murray's suggestion as to the quadrants of the pelvic brim was ingenious, but might be misleading if the student got the idea that the extremities of the occipito-frontal diameter of the head might be found anywhere in their respective quadrants; for he might then imagine that the head lay occasionally nearly in an antero-posterior direction—a position which was so rare as to be quite abnormal. He (*Professor Simpson*) was in the habit of using a shaded diagram to show that the long diameter of the foetal head need not lie exactly in the line of the oblique diameter of the pelvis, but that its extremities might have a range of something like an octant of the circle. He would take the President's proposals to avizandum.

*Dr Berry Hart* did not consider Dr Milne Murray's definition of position any improvement, as it merely gave an artificial division to the pelvic brim, and did not define the foetal element of position,

which was the real difficulty. He (Dr Hart) did not consider any accurate anatomical definition possible, and the functional one he had given was not only legitimate, but solved the difficulty.

VIII. *Dr Ballantyne* read his paper on THE HEAD OF THE INFANT AT BIRTH, Part II., which will appear in a future number of this Journal.

*Dr Berry Hart* considered the paper a most valuable one, and hoped soon to have an opportunity of studying it in a completed form.

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#### INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE Royal College of Physicians of Edinburgh, The Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, have made arrangements by which, after one series of Examinations, held in Edinburgh or in Glasgow, or in Edinburgh and Glasgow, the Student may obtain the Diplomas of the Three Co-operating Bodies.

The object of the Joint Examination is to give to Students facilities for obtaining, after one series of Examinations, the Qualifications in Medicine and Surgery of the three Scottish Corporations. Students passing the Final Examination, which is a qualifying Examination under the Medical Act, 1886, and entitles the holder to practise Medicine, Surgery, and Midwifery, will be enabled to register three Diplomas under the Medical Acts, viz.—Licentiate of the Royal College of Physicians of Edinburgh, Licentiate of the Royal College of Surgeons of Edinburgh, and Licentiate of the Faculty of Physicians and Surgeons of Glasgow.

Female Candidates are admitted to the Examinations for this Qualification equally with male candidates; and throughout these Regulations the masculine pronoun is to be read as standing for Candidates irrespective of sex.

The three Co-operating Bodies grant their *Single* Qualifications only to Candidates who already possess another and opposite Qualification in Medicine or Surgery, as the case may be. Thus the Royal College of Physicians of Edinburgh may grant its License on Examination to Candidates already possessed of a recognised British, Irish, Indian, or Colonial Qualification in Surgery, and the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, may each grant its License on Examination to Candidates already Licentiates in Medicine of any British, Irish, or Colonial College whose Preliminary Examination and course of Professional Study is proved to be sufficient, or Graduates in Medicine of any British, Irish, Indian, or Colonial University. Copies of the Regulations for the *Single* Qualification of any of the Bodies may be had on application to the respective Secretaries.

*N.B.*—Under the provisions of the Medical Act of 1886, these *Single* Qualifications do not confer the right to registration, but may be registered as additional Qualifications by those already on the Register.

#### GENERAL REGULATIONS.

Candidates shall be subjected to three Professional Examinations, herein called the First Examination, the Second Examination, and the Final Examination, to be conducted at separate times, partly in writing, and partly practically and orally.

Opportunities of entering for each of these Examinations will be presented six times in each year—four times in Edinburgh and twice in Glasgow. A Candidate at any of these Examinations may present himself either in

Edinburgh or Glasgow, irrespective of the place at which he may have previously been examined.

Candidates who are unsuccessful, either at the First, the Second, or the Final Examination, shall be remitted to their studies for a period to be determined by the judgment of the Examiners, but not in any case less than three months.

All the subjects of the respective Examinations required from a Candidate shall be taken up at one period.

Candidates must pass in all the subjects at the Written part of the Examination before they can be admitted to the Oral Examination.

A Candidate who obtains not less than 65 per cent. of the marks at the Oral Examination, and who has gained not less than 55 per cent. in the same subject at the Written Examination, may obtain an absolute Pass in any subject of the First, the Second, or the Final Examination, although he may at the same time fail in other subjects. In such a case a Record shall be made of the subject or subjects passed, and the Candidate shall be exempt from re-examination in them.

Applicants for admission to any of the Examinations are required, on entering, to lodge with the Inspector of Certificates a schedule (forms for which are supplied) showing the Courses he has attended qualifying for admission.

No Candidate can be held to be entered for any Examination till he has sent in the proper schedule, proved his course of study, and paid the appropriate fee.

At the Oral Examinations Candidates shall be examined as far as possible in the order of their entry.

The subjects of the Second Professional Examination should, as far as possible, be studied only after the First Examination has been passed; and similarly, the subjects of the Final Examination should, as far as possible, be studied only after the Second Examination has been passed. By adhering to this course the student will have his attention occupied by preparing for only one Examination at a time.

Candidates, qualified by having attended the necessary courses of study, may however enter for two or more Examinations, to be passed successively at the same period, the condition being that failure to pass in all the subjects of any Examination precludes the Candidate from admission to the succeeding Examination. The necessary Schedule and Certificates must be lodged, and the fees for these respective Examinations paid, at the period of entering for the earliest of them. In the event of failure, the fee paid for any subsequent Examination to which a Candidate had not been admissible will be returned to the Candidate.

No Candidate shall be admissible to Examination who has been rejected by any other Licensing Board within the three preceding months.

#### SPECIAL REGULATION.

Any Graduate in Medicine and Surgery of a British or Irish University, and any Graduate or Licentiate in Medicine and Surgery of the Universities and Colleges described hereafter, who shall have passed such an Examination or Examinations as shall comprise the subjects of the First and Second Examinations of this Board, and be proved to have been co-extensive therewith, and who shall have completed not less than four years' Medical Study, including all the subjects of this curriculum, shall be admissible to the Final Examination of this Board. Any Candidate so admitted shall pay a fee of twenty-five guineas at the time of entering for the Examination. The sum of £20 will be returned to unsuccessful Candidates.

*The following are the Names and Addresses of the Inspectors of Certificates :—*  
In Edinburgh:—Mr James Robertson, Solicitor, 1 George Square. In Glasgow:—Mr Alexander Duncan, B.A., Faculty Hall, 242 St Vincent Street.



The following are the General Medical Council's Requirements for the Preliminary Examination of Medical Students:—

No person shall be allowed to be registered as a Medical Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as specified in the following list:—1. English Language, including Grammar and Composition; 2. Latin, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors; 3. Elements of Mathematics, comprising (a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first book of Euclid, with easy questions on the subject-matter of the same; 4. Elementary Mechanics of Solids<sup>1</sup> and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics; 5. One of the following optional subjects:—(a) Greek; (b) French; (c) German; (d) Italian; (e) any other Modern Language; (f) Logic; (g) Botany; (h) Zoology; (i) Elementary Chemistry. These subjects may be passed at one or more Examinations.

The following List of Examining bodies are recognised for registration as Medical Students, provided that in all cases the subject of Mechanics, as above set forth, be shown to have been included in the Examination:—

### (1.) UNIVERSITIES OF THE UNITED KINGDOM.

*Oxford*.—Examination for a Degree in Arts; Responsions; Moderations; Local Examinations (Senior), Certificate to include Latin and Mathematics; Local Examinations (Junior), Certificate to include Latin and Mathematics; and also one of the following optional subjects:—Greek, French, German.

*Cambridge*.—Examination for a Degree in Arts; Previous Examination; Local Examinations (Senior), Certificate to include Latin and Mathematics; Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek, French, German. Higher Local Examinations.

*Durham*.—Examination for a Degree in Arts; Examination for Students at the end of their first year; Examination for Certificate of Proficiency.

*Oxford and Cambridge Schools' Examination Board*.—Certificate to include the following subjects, an adequate knowledge of English Grammar and Orthography, as shown in the course of the Examination, to the satisfaction of the Examiners, being held as conforming to the requirements of the Medical Council in regard to those subjects:—(a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first two books of Euclid; (d) Latin, including Translation and Grammar; (e) and one of the following optional subjects:—Greek, French, German.

*London*.—Examination for a Degree in Arts or Science; Preliminary Scientific (M.B.) Examination; Matriculation Examination.

*Victoria University*.—Preliminary Examination, Latin to be one of the subjects; Entrance Examination in Arts, to include all the subjects required.

*Edinburgh*.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Science or Medicine and Surgery. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German. Local Examinations (Junior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German.

*Aberdeen*.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Medicine and Surgery; Local Examination (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry,

<sup>1</sup> In the case of Students in Universities with a prolonged curriculum, where the Examination in Mechanics required for their Degree is taken at a more advanced period of study than before commencing Medical Education, Registration can be effected only on having passed the Examination in Mechanics, but their Registration may be then antedated to the period at which the Preliminary was passed.

Latin, and also one of the following optional subjects:—Greek, French, German. Local Examinations (Junior Certificate); Certificate to include all the subjects required.

*Glasgow*.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Medicine and Surgery; Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German. Local Examinations (Junior Certificate); Certificate to include all the subjects required.

*St Andrews*.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Medicine and Surgery; Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—Greek, French, German. Local Examinations (Junior Certificate), to include all the subjects required.

*Dublin*.—Examination for a Degree in Arts; Public Entrance Examination; General Examination at end of Senior Freshman year.

*Queen's University (Ireland)*<sup>1</sup>.—Examination for a Degree in Arts; Entrance or Matriculation Examination; Previous Examination for B.A. Degree; Local Examinations for Men and Women; Certificate to include all the subjects required by the General Medical Council.

*Royal University of Ireland*.—Matriculation Examination; Examination for a Degree in Arts.

## (2.) OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT (1858).

*The Society of Apothecaries of London*.—Examination in Arts.

*Royal Colleges of Physicians and Surgeons, Edinburgh*.—Preliminary (combined) Examination in General Education.

*Faculty of Physicians and Surgeons of Glasgow*.—Preliminary Examination in General Education.

*Royal College of Surgeons in Ireland*.—Preliminary Examination, Certificate to include Mathematics.

## (3.) EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE MEDICAL ACT (1858).

*College of Preceptors*.—Examination for a First Class Certificate, or Second Class Certificate of First or Second Division, Algebra, Geometry, Latin, and a Modern Language having been taken.

*Intermediate Education Board of Ireland*; Junior, Middle, and Senior Grades.—Certificate in each case to include all the subjects required by the General Medical Council.

*Queen's College, Belfast*; *Queen's College, Cork*; *Queen's College, Galway*.—Matriculation Examination.

*St David's College, Lampeter*.—Responsions Examination to include all the subjects required.

*Educational Institute of Scotland*.—Preliminary Medical Examination.

*Pharmaceutical Society of Great Britain*.—Preliminary and Minor Examinations *pro tanto*.

*Pharmaceutical Society of Ireland*.—Preliminary Examination *pro tanto*.

*Scotch Education Department*.—Leaving Certificates in each Grade and in Honours.

## (4.) INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

*Universities of Calcutta, Madras, and Bombay*.—Entrance Examination, Certificate to include Latin.

*McGill College, and Bishop's College, Montreal*; *Toronto*.—Matriculation Examination.

<sup>1</sup> This University was merged into the Royal University of Ireland in 1881, but Certificates previously obtained are still accepted for registration.

*Trinity College, Toronto; Queen's College, Kingston; Victoria College, Upper Canada.*—Matriculation Examination.

*Western University of Ontario.*—Entrance Examination in Medicine, Certificate to include all the subjects required for registration.

*College of Physicians and Surgeons of Ontario.*—Preliminary Examination, Certificate to include all the subjects required for registration.

*University of Manitoba.*—Previous Examination.

*King's College, Nova Scotia.*—Matriculation Examination; Responsions.

*University of Halifax, Nova Scotia.*—Matriculation Examination.

*University of Fredericton, New Brunswick.*—Matriculation Examination.

*Mount Allison College, New Brunswick.*—Examination for a Degree in Arts.

*Dalhousie College and University, Halifax, Nova Scotia.*—Matriculation and Sessional Examinations.

*Provincial Medical Board of Nova Scotia.*—Matriculation Examination.

*University of California.*—Examination in Department of Letters.

*University of Melbourne.*—Matriculation Examination.

*University of Sydney.*—Matriculation Examination.

*University of the Cape of Good Hope.*—Matriculation Examination; Examination for a Degree in Arts.

*University of Adelaide.*—Matriculation Examination or its substitute, the Senior Public Examination, Junior Public Examination, Certificate to include all the subjects required for registration.

*Codrington College, Barbados.*—English Certificate for Students of two years' standing, and Latin Certificate, or "Testamur."

*Tasmanian Council of Education.*—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

*Christ's College, Canterbury, New Zealand.*—Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

*University of New Zealand.*—Entrance Examination.

*University of Otago, New Zealand.*—Preliminary Examination.

*Ceylon Medical College.*—Preliminary Examination (Primary Class).

*Germany and other Continental Countries.*—Gymnasial, Abiturienten-Examen, and other Corresponding Entrance Examinations to the Universities.

*Gymnasia of the Circuit of Dorpat.*—Examinations of Maturity.

The following pages contain a tabular abstract of the regulations of the various Licensing Boards, as well as a list of the Hospitals, Dispensaries, etc., attached to our Scotch Medical Schools; also the regulations for the Army, Indian, and Navy Medical Services. The space at our disposal does not allow of more detailed information. But, in point of fact, the regulations of all Licensing Boards now correspond much more closely than they used to do, and the regulations of the General Medical Council afford a key to the general requirements of all of them. For special information, application should always be made to the Secretaries of the Licensing Boards; or, in the case of the Universities, recourse may be had to the published Calendars.

The *Preliminary Examinations* are usually held before the commencement, and at the end, of the Winter Session,—viz., in October, March, or April—sometimes also at the end of the Summer Session. The Professional Examinations in Universities are usually after the Winter and during the Summer Sessions; in Edinburgh, however, the first Professional is held in October as well as April. The other Licensing Boards' examinations are held at various periods throughout the year. Special examinations, under circumstances of urgency, can be held at almost any time; but they, of course, entail considerable addition to the expense.





## MEDICAL SCHOOLS OF SCOTLAND, 1890-91.

## WINTER SESSION.

| SUBJECTS.                                               | UNIVERSITY OF EDINBURGH.                                                           | SCHOOL OF MEDICINE, EDINBURGH.                                                                | UNIVERSITY OF GLASGOW.                    | ANDERSON'S COLL. MED. SCHOOL, GLASGOW.        | ST MUNGO'S COLLEGE, GLASGOW.                        | WESTERN MEDICAL SCHOOL, GLASGOW.     | UNIVERSITY OF ABERDEEN.                     | UNIVERSITY OF ST ANDREWS. |
|---------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------|-----------------------------------------------------|--------------------------------------|---------------------------------------------|---------------------------|
| Anatomy, systematic and Practical, with Demonstrations. | Prof. Sir W. Turner.                                                               | Dr J. Symington and Mr Macdonald Brown.†                                                      | Professor Cleland.                        | Dr A. M. Buchanan.                            | Prof. Clark and Demonstrator.                       | ...                                  | Professor Reid.                             | ...                       |
| Physiology, or Institutes of Medicine.*                 | Professor Rutherford.                                                              | Mr James Hunter & Dr N. Paton.†                                                               | Professor McKendrick.                     | Dr James Christie.                            | Prof. John Barlow.                                  | ...                                  | Professor McWilliam.                        | Prof. Pettigrew.          |
| Chemistry, and Practical Chemistry.                     | Professor C. Brown.                                                                | Dr Macadam, Mr King, Mr I. Macadam, Dr Drinkwater, Mr R. Paterson, Dr Aitken, and Dr Readman. | Professor J. Ferguson.                    | Professor J. Robertson Watson.                | Professor James M Milne.                            | A. B. Robertson                      | ...                                         | Prof. Purdie.             |
| Materia Medica & Therapeutics.                          | Prof. T. R. Fraser.                                                                | Drs Craig & Stockman.†                                                                        | Professor Charteris.                      | Dr Napier.                                    | Prof. John Dougall.                                 | ...                                  | Professor Cash.                             | ...                       |
| Practice of Medicine.                                   | Professor Grainger Stewart.                                                        | Drs Willie, James, Affleck, Bramwell, G. A. Gibson, and Philip.†                              | Professor Gairdner.                       | Dr S. Gemmell.                                | Professor Robertson.                                | Dr Cowan Lees.                       | Prof. Smith-Shand.                          | ...                       |
| Surgery.                                                | Professor Chiene.                                                                  | Dr MacGillivray, Mr Cathcart, Mr Caird, & Mr Hodsdon.                                         | Professor Sir G. H. B. Macleod.           | Dr Dunlop.                                    | Prof. Knox.                                         | ...                                  | Professor A. Ogston.                        | ...                       |
| Midwifery, etc.                                         | Professor Simpson.                                                                 | Drs Milne Murray and Matheson.                                                                | Professor Leishman.                       | W. L. Reid.                                   | Prof. Stirton (in Summer).                          | J. Stuart Nairne.                    | Professor Stephenson.                       | ...                       |
| Natural Philosophy.                                     | Professor Tait.                                                                    | ...                                                                                           | Prof. Sir W. Thomson.                     | ...                                           | ...                                                 | ...                                  | ...                                         | Prof. Butler.             |
| Natural History, and Practical Natural History.         | Professor Cossar Ewart.                                                            | Mr J. Arthur Thomson.                                                                         | Professor Young.                          | ...                                           | Prof. E. E. Prince.                                 | ...                                  | Professor A. Nicholson.                     | Prof. McIntosh.           |
| Practical Botany. Advanced and Elementary.              | Professor Bayley Balfour.                                                          | ...                                                                                           | ...                                       | Prof. King.                                   | Dr Swanson.                                         | ...                                  | ...                                         | ...                       |
| General and Practical Pathology.                        | Professor Greenfield.                                                              | Dr A. Bruce and Dr W. Russell.                                                                | ...                                       | At Royal or Western Infirmary.                | Dr J. L. Steven.                                    | At Western Infirmary.                | Professor Hamilton.                         | ...                       |
| Clinical Medicine.                                      | Professors G. Stewart, T. R. Fraser, Greenfield, and Simpson on Diseases of Women. | Drs Muirhead, Brakenridge, Willie, Affleck, and H. Croom for Diseases of Women.‡              | Prof. McCall Anderson and Prof. Gairdner. | Physicians of the Royal or Western Infirmary. | Prof. M'Vail and Physicians of the Royal Infirmary. | Physicians of the Western Infirmary. | Drs Smith-Shand, Fraser, and Blaikie Smith. | ...                       |
| Clinical Surgery.                                       | Professor Annandale.                                                               | Mr Duncan and Mr Miller.†                                                                     | Prof. George Buchanan and Prof. Macleod.  | Surgeons of the Royal or Western Infirmary.   | Prof. Macewen and Surgeons of the Royal Infirmary.  | Surgeons of the Western Infirmary.   | Drs Ogston, Garden, and Hall.               | ...                       |
| Medical Jurisprudence and Public Health.                | Prof. Sir Douglas MacLagan.                                                        | Dr Littlejohn.                                                                                | ...                                       | Public Health—Dr Christie.                    | Public Health, Prof. Glaister and Dr M'Vail.‡       | In Summer.                           | ...                                         | ...                       |

In connexion with the University of Edinburgh, during the Winter Session classes of Practical Materia Medica (including Pharmacy), Practical Pathology, and Practical Hygiene are taught by the Professors of these subjects and their Assistants; lectures and clinical instruction on Diseases of Children, at Royal Hospital for Sick Children, are given by Dr James Carmichael and Dr Playfair; on Comparative Embryology by Mr George Brook; and on Philosophy of Natural History by Mr G. J. Romanes, M.A., LL.D.

Lectures are given in the School of Medicine, Edinburgh, during the Winter Session on the Diseases of the Ear by Dr Kirk Duncan; on Botany by Mr M'Alpine; on Diseases of the Ear and Throat by Dr P. M'Bride; on Diseases of the Eye by Mr George Berry; on Diseases of the Skin by Dr Allan Jamieson; on Diseases of Children by Mr J. Bell and Dr Burn Murdoch; on Infancy and Childhood by Drs J. W. Ballantyne and John Thomson; on Diseases of the Chest by Dr Philip; on Vaccination by Drs Husband and Buist; on Diseases of the Tropics and Climatology by Dr Felkin; on Systematic Gynaecology by Dr Halliday Croom; and on Practical Midwifery and Clinical Gynaecology by Drs P. Young, Berry Hart, and Brewis.

There are Special Classes for Women on Chemistry, Anatomy, Surgery, Clinical Medicine, Clinical Surgery, Diseases of Children, Vaccination, Diseases of the Tropics and Climatology, and Electrical Gynaecology. Practical Physiology is taught by the respective Professors during the Winter and Summer Sessions in Edinburgh, and in Summer at Aberdeen. Practical Surgery is taught during the Winter Session in the University of Aberdeen by Professor Ogston and Assistant.

Lectures are given in St Mungo's College, Glasgow, during the Winter Session, on Advanced Embryology by Prof. Prince; on Gynaecology by Dr Kelly; on Ophthalmology by Prof. Wolfe; and on Diseases of the Throat and Nose by Dr Newman.

\* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students which should always be inquired for.

## MEDICAL SCHOOLS OF SCOTLAND, 1891.

## SUMMER SESSION.

| SUBJECTS.                                                     | UNIVERSITY OF EDINBURGH.                                                           | SCHOOL OF MEDICINE, EDINBURGH.                                                                       | UNIVERSITY OF GLASGOW.                     | ANDERSON'S COLLEGE MEDICAL SCHOOL, GLASGOW.   | ST MUNGO'S COLLEGE, GLASGOW.                         | WESTERN MEDICAL SCHOOL, GLASGOW. | UNIVERSITY OF ABERDEEN. |
|---------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|------------------------------------------------------|----------------------------------|-------------------------|
| Practical Anatomy and Demonstrations.                         | Prof. Sir Wm. Turner.                                                              | Dr J. Symington and Mr M. Brown.*                                                                    | Professor Cleland.                         | Dr A. M. Buchanan.                            | Prof. Clark and Demonstrator.                        | ...                              | Professor Reid.         |
| Botany.                                                       | Professor Bayley Balfour.                                                          | Mr A. N. McAlpine.                                                                                   | Professor F. O. Bower.                     | Prof. King.                                   | Dr James Swanson.                                    | ...                              | Professor Trail.        |
| Materia Medica and Therapeutics and Practical Materia Medica. | Prof. T. R. Fraser.                                                                | Dr Craig and Dr Stockman.*                                                                           | Professor Charteris.                       | Dr Napier.                                    | Professor Dougall (in Winter).                       | ...                              | Professor Cash.         |
| Midwifery, etc.                                               | Professor Simpson.                                                                 | Drs Croom, B. Hart, and F. Barbour.*                                                                 | Professor Leishman.                        | Dr W. L. Reid.                                | Prof. James Stirton.                                 | J. Stuart Nairne.                | Prof. W. Stephenson.    |
| Practical Hygiene, Medical Jurisprudence and Public Health.   | Professor Sir Douglas MacLagan.                                                    | Dr Littlejohn.†                                                                                      | Professor Simpson.‡                        | Dr Eben. Duncan.                              | Prof. Glais-ter and Dr M'Vail.                       | Dr P. Caldwell Smith.            | Professor M. Hay.       |
| Comparative Anatomy.                                          | Prof. Sir Wm. Turner.                                                              | ...                                                                                                  | Professor Young.                           | ...                                           | Prof. E. E. Prince.                                  | ...                              | ...                     |
| Practical Physiology, incl. Histology.                        | Professor Rutherford.                                                              | Mr J. Hunter and Dr Noel Paton.                                                                      | Professor M'Kendrick.                      | Dr James Christie.                            | Prof. Barlow.                                        | ...                              | Professor M'William.    |
| Practical Pathology, incl. Histology.                         | Professor Greenfield.                                                              | Dr A. Bruce and Dr W. Russell.                                                                       | Dr Joseph Coats.                           | At Royal or Western Infirmary.                | Dr J. L. Steven.                                     | At Western Infirmary.            | Professor Hamilton.     |
| Organic and Practical Chemistry.                              | Professor Crum Brown.                                                              | Dr Macadam, Mr King, Mr I. Macadam, Dr Drinkwater, Mr R. Paterson, Dr A. P. Aitken, and Dr Readman.* | Professor J. Ferguson.                     | Professor J. Robertson Watson.                | Professor James M. Milne.                            | A. B. Robertson.                 | ...                     |
| Operative Surgery and Surgical Anatomy.                       | Professor Chiene.                                                                  | Dr C. W. MacGillivray, Mr C. W. Cathcart, Mr Caird, and Mr Hodsdon.*                                 | Professor Sir G. H. B. Macleod.            | Dr Dunlop.                                    | Dr Whitson.                                          | ...                              | Professor A. Ogston.    |
| Mental Diseases.                                              | Dr Clouston.                                                                       | Dr J. B. Tuke.                                                                                       | Dr Yellowlees.                             | ...                                           | Dr A. C. Clark.                                      | ...                              | Dr Reid.                |
| Natural History.                                              | Professor Cossar Ewart.                                                            | Mr J. Arthur Thomson.                                                                                | Professor Young.                           | ...                                           | In Winter.                                           | ...                              | Professor Nicholson.    |
| Clinical Medicine.                                            | Professors G. Stewart, T. R. Fraser, Greenfield, and Simpson on Diseases of Women. | Drs Muirhead, Brakenridge, Wyllie, Affleck, and H. Croom for Diseases of Women.‡                     | Prof. M'Call, Anderson and Prof. Gairdner. | Physicians of the Royal or Western Infirmary. | Prof. M'Vail and Physicians of the Royal Infirmary.  | Physicians of Western Infirmary. | ...                     |
| Clinical Surgery.                                             | Professor Annandale.                                                               | Mr Duncan and Mr Miller.                                                                             | Prof. George Buchanan and Prof. Macleod.   | Surgeons of the Royal or Western Infirmary.   | Professor Macewen & Surgeons of the Royal Infirmary. | Surgeons of West. Infirmary.     | ...                     |

In connexion with the University of Edinburgh during the Summer Session, classes of Practical Botany, Practical Natural History, and Practical Hygiene, are taught by the Professors of these subjects and their Assistants; lectures and clinical instruction on Diseases of Children, at Royal Hospital for Sick Children, are given by Dr J. Carmichael and Dr Playfair; on Diseases of the Eye by Dr D. Argyll Robertson; and on Comparative Embryology by Mr George Broek.

In connexion with St Mungo's College, during the Summer Session, Dr Adams will lecture on Surgical Diseases of Children, and Dr Black on Medical Diseases of Children; Dr Macfie on Otology; Dr Provan on Dermatology; and Dr Workman on Bacteriology.

\* These are not conjoint courses, but separate ones by the gentlemen named.

† Dr Littlejohn gives courses during both the Winter and Summer Sessions.

‡ This is a joint course.

§ In Winter.

\*.\* For additional Summer Courses on special subjects, see the Prospectus of each School.

In connexion with the Summer Session of the Medical Schools in Scotland, instruction in Vaccination is given at the Royal Public Dispensary, Edinburgh, both Summer and Winter, by Dr Husband; and in the Western Dispensary and Cowgate Dispensary, by Dr Buist; at the Faculty Hall, Glasgow, on Mondays at 2, by Dr Thomson; and at the Royal Infirmary, Glasgow, on Mondays and Thursdays at 12 o'clock, by Dr Thomson, and by Dr M'Vail at Western Infirmary on Mondays at 12 o'clock.

Medical Psychology and Insanity are taught in Summer by Dr Clouston and Dr J. B. Tuke in Edinburgh, in Glasgow by Dr Yellowlees and Dr A. C. Clark, and in Aberdeen by Dr Reid.

Practical Medicine and Physical Diagnosis by Dr James, Dr Gibson, Dr Byrom Bramwell, and Dr Philip in Edinburgh.

Diseases of Children by Mr J. Bell and Dr Burn Murdoch in School of Medicine, Edinburgh; in St Mungo's College by Drs Black and Adams, Glasgow; by Prof. Stephenson at Children's Hospital, Aberdeen.

Diseases of Infancy and Childhood by Dr J. W. Ballantyne and Dr John Thomson in School of Medicine, Edinburgh.

Diseases of the Chest by Dr R. W. Philip in School of Medicine, Edinburgh.

Diseases of the Eye by Mr George Berry in School of Medicine, Edinburgh, Dr M'Kenzie Davidson in Aberdeen, and by Dr Thomas Reid, Dr Fergus, Dr Meighan, and Prof. Wolfe in Glasgow.

Diseases of the Ear by Dr Kirk Duncanson in School of Medicine, Edinburgh; and of the Ear by Dr Johnston Macfie and Dr Barr in Glasgow; of the Ear, Nose, and Throat by Dr Walker Downie in Glasgow; and in Aberdeen, Ear and Larynx Diseases by Dr M'Kenzie Booth.

Diseases of the Throat and Nose by Dr Newman in Glasgow.

Diseases of the Skin by Dr Allan Jamieson in School of Medicine, Edinburgh, and in Aberdeen by Dr Garden, and in Glasgow by Dr Provau.

Dental Surgery by Dr J. C. Woodburn in Glasgow, and Dr Williamson in Aberdeen.

Laryngology and Medical Ophthalmology in Edinburgh by Dr John Wyllie.

Diseases of the Tropics and Climatology in Edinburgh by Dr R. W. Felkin.

Lectures on Public Health are delivered during the Summer Session in Aberdeen by Professor Hay; in School of Medicine, Edinburgh, by Dr Littlejohn; in Glasgow by Dr P. Caldwell Smith, and by Prof. Glaister and Dr J. C. M'Vail.

Systematic Gynæcology in School of Medicine, Edinburgh, by Dr Brewis.

Clinical Gynæcology and Practical Midwifery in School of Medicine, Edinburgh, by Drs Croom, Young, and Brewis.

Special Courses for Women in School of Medicine, Edinburgh, on Practical Chemistry, Practical Pathology, Materia Medica, etc.

## LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

### EDINBURGH.

ROYAL INFIRMARY, including LOCK HOSPITAL. 670 Beds and 30 Cots. Visits daily from 12 till 2 P.M. Consulting Physicians, Dr George W. Balfour and Professor Sir Douglas MacLagan; Dr Alexander Keiller (for Diseases of Women). Physicians, Professors Grainger Stewart, Fraser, and Greenfield; Drs Claud Muirhead, D. J. Brakenridge, John Wyllie, and J. O. Affleck; Professor Simpson and Dr J. Halliday Croom (for Diseases of Women). Assistant Physicians, Drs Andrew Smart, Alex. James, and Byrom Bramwell; Drs D. Berry Hart and A. H. F. Barbour (for Diseases of Women). Extra Physician, Dr Allan Jamieson (for Diseases of the Skin). Consulting Surgeons, Dr Gillespie, Dr P. H. Watson, and Mr Joseph Bell. Surgeons, Professors Annandale and Chiene, Mr John Duncan, Mr A. G. Miller, and Dr P. H. Maclaren. Assistant Surgeons, Drs Chas. W. MacGillivray, J. M.



Cotterill, Chas. W. Cathcart, Francis M. Caird, J. W. B. Hodsdon, and J. Shaw M'Laren; Ophthalmic Surgeons, Dr Argyll Robertson and Mr George A. Berry. Surgeon to the Ear and Throat Department, Dr P. M'Bride. Assistant Ophthalmic Surgeons, Dr George Mackay and W. George Sym. Dental Department, Surgeons of the Edinburgh Dental Hospital and School. Pathologists, Drs Alex. Bruce and William Russell.

CONVALESCENT HOUSE, Corstorphine. Surgeon, Mr Cotterill. Extra Surgeon, Mr Alex. Matthew.

CHALMERS HOSPITAL FOR THE SICK AND HURT (Public and Private Wards). 40 Beds for medical and surgical patients. In Private Wards the patients are charged 5s. per diem for board. Physician, Dr George W. Balfour. Surgeon, Dr P. H. Watson.

ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL. 30 Beds; over 250 in-patients and 700 out-patients yearly. Consulting Physicians, Drs Moir, Graham Weir, and Keiller. Consulting Surgeon, Professor Annandale. Physicians, Professor Simpson, Drs Halliday Croom, Underhill, and Berry Hart. Assistant Physicians, Drs Freeland Barbour and Milne Murray. Secretary and Treasurer, Andrew Scott, C.A.

ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN. 80 Beds; number of patients for 1889, 8424. Consulting Physicians, Dr Graham Weir, Dr Geo. W. Balfour, Dr R. Peel Ritchie, and Professor T. Grainger Stewart. Consulting Surgeon, Professor Annandale. Surgeon, Mr Joseph Bell. Pathologist, Dr Alexander Bruce. Ordinary Physicians, Dr James Carmichael, Dr John Playfair, and Dr Burn Murdoch. Extra Physicians, Dr G. H. Melville Dunlop, Dr John Thomson, and Dr A. S. Cumming. Surgeon-Dentist, Dr John Smith. Ophthalmic Surgeon, Dr Argyll Robertson. Resident Physicians, Drs Hamilton G. Langwill and W. G. W. Sanders. Matron, Miss Bird. Honorary Secretaries, Messrs Henry & Scott, W.S., 20 St Andrew Square.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 12,000 patients annually. Consulting Physician, Dr George Balfour. Consulting Surgeon, Dr Littlejohn. Medical Officers, Drs W. Husband, D. Wilson, Andrew, P. Young, A. Black, Dunlop, Blaikie, Webster, Wallace, Haultain, and Stiles. Consulting Physicians-Accoucheur, Drs Keiller and Charles Bell. Midwifery and Diseases of Women, Drs Andrew, Young, and Dunlop. Vaccination, Dr W. Husband. Diseases of the Ear and Throat, Dr Blaikie. Mental Diseases, Dr J. Batty Tuke, senr. Apothecary, Mr W. Duncan. Clinique daily at 3 P.M. Vaccination, Wednesday and Saturday, 12 noon. Midwifery and Diseases of Women, Tuesday and Friday, 1 P.M. Laboratory, 3 P.M. and 7 P.M. Secretary, R. C. Gray, S.S.C. James Andrew, M.D., Secretary to the Medical Officers.

NEW TOWN DISPENSARY, 17 Thistle Street. About 10,000 patients annually. Medical Officers, Drs Thyne, Ferguson, K. M. Douglas, Stockman, Miller, and Gulland. Acting Physicians-Accoucheur, Drs Brewis and Wood. Superintendent of Vaccination, Dr Cadell. Diseases of the Ear and Throat, Dr Horsley. Diseases of the Eye, Dr Maddox. Diseases of Women, Dr Brewis. Diseases of Children, Dr Thomson. Mental Diseases, Dr John Tuke. Clinique daily at 3 P.M. Vaccination on Tuesdays and Fridays at 12.

THE EDINBURGH PROVIDENT DISPENSARY, Marshall Street. Upwards of 9500 patients annually. Consulting Physician, Dr Andrew Smart. Consulting Surgeon, Dr Joseph Bell. Dental Surgeon, R. Urquhart. Medical Officers, Dr Charles Bell, Dr F. Troup, Dr A. Matheson, Dr Robertson, Dr E. Price, Dr G. Price, Dr Cullen, Dr Booth, and Dr W. Keiller. Assistant Medical Officer, A. Messer, M.B., C.M. Secretary, R. Urquhart. Vaccination (Tuesday and Friday at 1 o'clock), Dr Matheson. Diseases of Women and Children, Dr C. Bell and Dr Matheson (Tuesday and Friday at 1 o'clock). Out-door practice and Practical Midwifery daily. Surgical Instrument Maker, A. Young, Forrest Road. Janitor, Charles D. Wright.



**WESTERN DISPENSARY**, Chalmers Institute, Ponton Street, Fountain-bridge. Chairman, James Simson. Acting Committee, Miss Chalmers, Miss M. Douglas, Mrs Owen, S. Henderson, Stair Kerr, Dr Bruce Bremner, A. Dickison, Dr Pringle, A. M'Lellan. Consulting Physician, Dr A. Peddie. Consulting Surgeon, Dr Joseph Bell. Consulting Physician for Diseases of Women, Dr Croom. Physicians, Drs Murdoch Brown, Bruce, and Home Ross. Assistant Physician, Dr Harvey Littlejohn. Surgeon, Dr Shaw MacLaren. Diseases of the Throat, Dr Hunter Mackenzie. Diseases of Women, Dr Milne Murray. Vaccination Officer, Dr J. B. Buist. Midwifery, Dr Barbour. Diseases of the Eye, Dr Sym. Dispenser, Mr A. Wood. Secretary to Medical Board, Dr J. Murdoch Brown. Treasurer, Mrs Macnider, 31 Stafford Street. Open daily from 3.45 to 4.45 P.M. Diseases of Women, Monday, 4.45 P.M. Diseases of Throat and Ear, Monday, 4 P.M. Vaccination, Thursday, 3 P.M. Special Surgical Cases, Wednesday, 4 P.M. Diseases of the Eye, Thursday, 4 P.M.

**ROYAL ASYLUM FOR THE INSANE**. About 850 patients, over 300 of whom are private patients. Physician, Dr Clouston.

**EYE, EAR, AND THROAT INFIRMARY**, 6 Cambridge Street, Lothian Road, Edinburgh. Consulting Surgeon, Joseph Bell, F.R.C.S.E. Surgeons, J. J. Kirk Duncanson, M.D., F.R.C.P.E., G. Hunter Mackenzie, M.D., J. Maxwell Ross, M.A., F.R.C.S., F.R.S.E., and William George Sym, M.D. Eye Clinique daily at 1 P.M. Ear Clinique on Mondays, Thursdays, and Saturdays, at 12 noon. Throat Clinique on Tuesdays and Fridays at 4 P.M.

**EYE DISPENSARY OF EDINBURGH**, 31 Chambers Street. About 1500 patients annually. Surgeons, Mr Berry and Mr Caverhill. Assistant Surgeon, Dr Mackay. Open Mondays, Wednesdays, and Fridays, at 1 P.M. Clinical Instruction is given in the Diagnosis and Treatment of Diseases of the Eye (including minor operations) by the Surgeons in charge. Fee for three months' course, £1, 1s.

**DENTAL HOSPITAL AND SCHOOL**, 5 Lauriston Lane. Consulting Physician, Alexander Peddie, M.D., F.R.C.P.E. Consulting Surgeon, Joseph Bell, F.R.C.S.E. Consulting Dental Surgeon, John Smith, M.D., LL.D., F.R.C.S.E. Lecturers, Messrs Andrew Wilson, W. Bowman Macleod, and G. W. Watson. Dental Surgeons, W. Bowman Macleod, A. Wilson, M. Macgregor, G. W. Watson, J. S. Durward, James Mackintosh, and W. Forrester. Assistant Dental Surgeons, John S. Amore, J. G. Munro, John Turner, David Monroe, F. Page, and T. Gregory. Tutorial Dental Surgeon, H. B. Ezard. Chloroformists, Robert Stewart, M.B., C.M., William Keiller, L.R.C.P. & S.E., and J. M. Farquharson, M.B., C.M. Dean, W. Bowman Macleod. Hon. Treasurer, Thomas Wallace, 87 Princes Street. Hon. Secretary, Lindsay Mackersy, W.S., 3A North St David Street. Mechanician, Mr W. E. B. Williams. Daily, 9 to 10 A.M. Average number of patients, 8000 per annum.

#### GLASGOW.

**ROYAL INFIRMARY**. 584 Beds. Visit daily at 9 A.M. for Surgeons; 10 A.M. for Physicians. Dispensary Hour, 2 P.M. Physicians, Dr Wood Smith, Prof. Alex. Robertson, and Drs J. W. Anderson and Samson Gemmell. Extra Physician, Prof. M'Vail. Surgeons, Profs. Macewen, Clark, Knox, and Dunlop, and Drs Lothian and Wm. J. Fleming. Gynaecologists, Prof. Stirton and Dr Kelly. Aural Surgeon, Dr Macfie. Dental Surgeon, Dr J. C. Woodburn. Assistant Physicians, Prof. Dougall, and Drs Black, Macphie, J. L. Steven, J. Dunlop, and Alex. Scott. Assistant Surgeons, Prof. Barlow, and Drs Adams, Muir, Shaw, Whitson, and Macintyre. Diseases of the Skin, Dr Provan. Diseases of the Throat and Nose, Dr Newman. Diseases of the Eye, Dr Freeland Fergus and Prof. Wolfe. Pathologist, Dr J. L. Steven. Histological Assistant to Pathologist, Dr Charles Workman. Vaccinator, Dr Hugh Thomson. Electrician, Dr Macintyre. M. Thomas, M.D., Superintendent.

**WESTERN INFIRMARY.** This Hospital contains about 400 Beds for Medical and Surgical patients. There are Wards for Skin Diseases and Diseases of Women, and an out-door Midwifery department. Physicians, W. T. Gairdner, M.D., T. McCall Anderson, M.D., James Finlayson, M.D., Gavin P. Tennent, M.D. Diseases of Women, W. Leishman, M.D. Surgeons, Sir George H. B. Macleod, M.D., George Buchanan, M.D., A. Patterson, M.D., Hector C. Cameron, M.D. Assistant-Physicians, Joseph Coats, M.D., and Jas. Christie, M.D. Dispensary Physicians, John Alexander, M.D., Wm. G. Dun, M.D., R. Stevenson Thomson, M.B., George Dickson, M.D., C. O. Hawthorne, M.D. Dispensary Physicians for Diseases of Women, W. L. Reid, M.D., Robert Kirk, M.D., Murdoch Cameron, M.D. Assistant Surgeons, J. C. Renton, M.B., Geo. T. Beatson, M.D. Dispensary Surgeons, David Newman, M.D., A. E. Maylard, M.B., B.S., and T. K. Dalziel, M.D. Extra-Dispensary Surgeon, Jas. Parker, M.D. Pathologist, Joseph Coats, M.D. Dispensary Surgeon for Diseases of the Ear, Thomas Barr, M.D. Dispensary Physician for Diseases of the Throat, J. Walker Downie, M.D. Hon. Consulting Ophthalmic Surgeon, Thomas Reid, M.D. Dental Surgeon, Wm. D. Woodburn, L.D.S.F.P.S. Vaccinator, Dr Wm. MacLennan. Medical Superintendent, A. W. Russell, M.A., M.B., C.M. Lady Superintendent, Miss E. Clyde. Secretary, Henry Johnston, 125 Buchanan Street. The hour of visit is 9 A.M. Operating days, Wednesday and Saturday. The Dispensary for out-patients is open daily at 2 P.M.

**LOCK HOSPITAL, 41 Rottenrow Street.** 80 Beds. Medical Officers, Drs James Dunlop and A. Patterson. Superintendent, P. Condra. Treasurer, T. D. Findlay. Secretary, Robert Young.

**MATERNITY HOSPITAL.** 36 Beds; in-patients, 353; out-patients, 1847. Consulting Surgeon, Dr George Buchanan. Senior Consulting Physician, Professor Leishman. Consulting Physician, Dr Samuel Sloan. Obstetric Physicians, Drs W. L. Reid and Murdoch Cameron. Assistant Obstetric Physicians, Drs E. H. Lawrence Oliphant and John Ritchie. Pathologist, Dr T. K. Dalziel. Out-door Physicians, Drs J. Dunlop, T. F. Gilmour, Malcolm Black, Alexander Jamieson, W. Wallace Anderson, William Cullen, and H. St Clair Gray.

**GLASGOW ROYAL ASYLUM, GARTNAVEL.** About 500 patients of all classes. Physician-Superintendent, Dr David Yellowlees. Lectures on Mental Diseases during Summer, at the University and the Asylum.

**EYE INFIRMARY.** 104 Beds (1165 house patients), 15,612 patients in all annually. Senior Surgeon, Thomas Reid, M.D. Surgeons, Thomas S. Meighan, M.D., Henry E. Clark, M.R.C.S., and J. Crawford Renton, M.D. Assistant Surgeons, D. N. Knox, M.A., M.B., A. Freeland Fergus, M.B., and A. Maitland Ramsay, M.B. (Pathologist). House Surgeon, Hugh Highet, M.D. Consulting Surgeon, Geo. Buchanan, M.D. Secretary, Wm. Geo. Black.

**DISPENSARY FOR SKIN DISEASES, 8 Elmbank Street.** Physician, Professor McCall Anderson. Open Mondays and Thursdays at 4 P.M., for out-door patients. This Institution is in connexion with the Wards for Skin Diseases in the Western Infirmary, to which the more important cases are sent.

**OPHTHALMIC INSTITUTION, 126 West Regent Street.** Consulting Physician, Dr S. J. Moore. Acting Surgeon, Dr J. R. Wolfe. Acting Physician, Dr J. S. Cumming. Assistant Surgeons, Dr J. McGregor Robertson and Dr A. T. Thomson. Secretary, Henry Johnston, 125 Buchanan Street. Open daily from 1 to 3 P.M. A Course of Lectures and Clinical Instruction during the Winter and Summer Sessions.

**GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 28 Elmbank Crescent.** 12 Beds. Hour of visit to the Hospital, 2 P.M. Out-patients seen at 2 P.M. on Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, and Saturdays. Number of cases treated annually, 3600. During the Winter

and Summer Sessions a Course of Practical Instruction in the Treatment of Ear Disease is given to the Students attending the Clinique. Senior Consulting Physician, Prof. W. T. Gairdner. Senior Consulting Surgeon, Dr James Morton. Pathologist, Dr Joseph Coats. Consulting Ophthalmic Surgeon, Dr Thomas Reid. Consulting Throat Surgeon, Dr Arthur Mechan. Consulting Dental Surgeon, Dr J. C. Woodburn. Physicians, Drs A. K. Irvine, A. L. Kelly, and J. Gardiner. Dental Surgeon, Mr Rees Price. Surgeon and Lecturer, Dr Thomas Barr. Secretary, Adam Sutherland, 75 West Nile Street.

### ABERDEEN.

ROYAL INFIRMARY. Upwards of 200 Beds. Visits daily, Physicians at 11.30, and Surgeons at 12 o'clock. Physicians, Drs Smith-Shand, Fraser, P. Blaikie Smith, and Rodger. Surgeons, Drs A. Ogston, Garden, Hall, and Mackenzie Booth. Ophthalmic Surgeon, Dr Davidson. Pathologist, Professor Hamilton. Dental Surgeon, Dr Williamson. Honorary Superintendent, Miss Rachel Frances Lumsden. Treasurer, William Carnie.

GENERAL DISPENSARY, LYING-IN AND VACCINE INSTITUTION. 11.240 patients annually. Open daily at 10 o'clock A.M. except Sundays. Medical Attendants and Vaccinators, Drs Booth, Watt, Ruxton, Gordon, Edmond, and Gibson. Surgeon Dentist, W. P. Robertson. Secretaries, Watt and Cumine.

CHILDREN'S HOSPITAL. Physicians, Drs Stephenson and Garden. Junior Physicians, Drs Macgregor and Gordon. Clinical Instruction daily at 11 o'clock.

LUNATIC ASYLUM. About 640 patients. Medical Superintendent, Dr Reid. Consulting Physician, Dr Jamieson. Treasurer, William Carnie.

EYE INSTITUTION, General Dispensary Buildings, Guestrow. Oculist, Dr McKenzie Davidson. Open three days in the week at 2.30 P.M. Clinical instruction on Diseases of the Eye and the use of the Ophthalmoscope. Average, 600 patients annually.

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## ARMY MEDICAL DEPARTMENT.

### WAR OFFICE, LONDON.

SCHEDULE OF QUALIFICATIONS NECESSARY FOR CANDIDATES DESIROUS OF OBTAINING COMMISSIONS IN THE ARMY MEDICAL STAFF, WITH THE CONDITIONS OF SERVICE.

#### APPOINTMENT.

1. Every candidate for a commission in the Army Medical Staff must be 21 years and not over 28 years of age at the date of commencement of the competitive examination. He must produce an extract from the register of his birth, or, in default, a declaration, made before a magistrate by one of his parents or guardians, giving his exact age. He must also produce a recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the Department if a commission be granted; and a certificate of moral character from the parochial clergyman, if possible.

2. He must possess two diplomas or licenses, recognised by the General Medical Council, one to practise Medicine and the other Surgery, and must be registered under the Medical Act in force in the United Kingdom at the time of his appointment. A candidate, however, who holds a single diploma from the Society of Apothecaries, obtained under the conditions of the Act of 1836, will be deemed to possess the double qualification required.

3. The candidate must sign a declaration upon honour that both his parents

are of unmixed European blood, and that he labours under no mental or constitutional disease, or hereditary tendency thereto, nor any imperfection or disability that can interfere with the efficient discharge of the duties of a medical officer in any climate: also that he does not hold, and has never held, any commission or appointment in the public services.

4. His physical fitness will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to pass the tests laid down by Regulations. The Board must also certify that he is free from organic or other disease, and from constitutional weakness, or other disability of any kind likely to unfit him for military service in any climate.

Certificates of age, registration of diplomas, etc., and of character, must accompany the declaration when signed and returned.

5. A public and open competition will be held twice in the year for the admission of qualified candidates as probationers. The number of appointments so competed for will be not less than half of the number of vacancies which shall have arisen in the last completed half-year ending on the 30th June or 31st December. It will be competent for the Secretary of State for War to fill up the remaining number from such qualified candidates as may be proposed by the governing bodies of Public Schools of Medicine in the United Kingdom or in the Colonies as he may think proper. Every candidate so proposed must be certified by the governing body proposing him to be duly qualified according to a standard laid down by the Secretary of State, and shall be approved by the Director-General.

The Secretary of State reserves the right of rejecting any candidate who may show a deficiency in his general education, as evinced by bad spelling or composition.

An entrance fee of £1 is required from each candidate admitted, and is payable at the conclusion of his physical examination, if pronounced fit.

6. The Secretary of State for War will from time to time fix the order of precedence and the proportion in which the several Schools of Medicine shall be offered the nomination of candidates.

7. A Surgeon on probation, on being so nominated, will be sent to some large station for instruction in Ambulance and Medical Staff Corps duties, until the commencement of the next course of study at the Army Medical School, when he will go through such course as the Secretary of State shall decide. After passing a qualifying examination in the military medical subjects taught there, and satisfying the Director-General that he is a person of proper skill, knowledge, and character, for permanent appointment in the Army Medical Staff, the Surgeon on probation will be commissioned as Surgeon.

The Surgeons on probation who pass out of the Army Medical School at one qualifying examination will take precedence among each other as Surgeons, as follows:—(a.) Those appointed on nomination according to their date of joining on probation. (b.) Those appointed by competition according to the last day of the competitive examination, and in the order of merit, as determined by the combined results of the competitive and qualifying examinations, with priority over any joining under paragraph (a) on the last day of the competitive examination. Their commissions will bear the date of the day of their passing out of the Army Medical School.

### EXAMINATIONS.

1. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—*a.* Anatomy and Physiology, 1000; *b.* Surgery, 1000; *c.* Medicine, including Therapeutics and the Diseases of Women and Children, 1000; *d.* Chemistry and Pharmacy, and a practical knowledge of drugs, 1000. [*N.B.*—The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus,



and the examination of Medical and Surgical patients at the bedside. The examination in Chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.] No candidate shall be considered eligible for the Army Medical Staff who shall not have obtained at least *one-third* of the marks obtainable in each of the above *compulsory subjects*.

2. Voluntary subjects for examination. Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be—French and German (150 each), 300; Natural Sciences, 300. A number less than one-third of the marks obtainable in each of these voluntary subjects will not be allowed to count in favour of the candidate who has qualified in the compulsory subjects. The knowledge of Modern Languages being considered of great importance, all intending competitors are urged to qualify in French and German. The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

The appointments announced for competition will be filled up from the list of qualified candidates arranged in the order of merit, as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

After passing this examination, every successful candidate will be required to attend one course of practical instruction at the Army Medical School as a Surgeon on probation on—(1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service.

All Surgeons on probation will be required to conform to such rules of discipline as the Senate may from time to time enact, and provide themselves with uniform, viz., the regulation undress and mess uniform of a surgeon, but without sword.

They will be required to attend the Medical Staff Mess at Netley, and to conform to the Rules and Regulations thereof.

#### RANK AND PAY.

The ranks and daily rates of pay of the officers of the Army Medical Staff are as follows:—Surgeon-General £2, 15s.; Deputy Surgeon-General, £2; Brigade Surgeon, £1, 10s., after five years in the rank, £1, 13s.; Surgeon-Major, £1, after fifteen years' service £1, 2s. 6d., after twenty years' service £1, 5s., after twenty-five years' service £1, 7s. 6d.; Surgeon, £200 a year, after five years' service £250, after ten years' service 15s. daily. Surgeon on probation, 6s.

The relative rank of officers of the Army Medical Staff is as follows:—I. A Director-General and Surgeon-General rank as Major-General. II. A Deputy Surgeon-General ranks as Colonel. III. A Brigade Surgeon ranks as Lieutenant-Colonel. IV. A Surgeon-Major ranks as Major; after twenty years' service as Surgeon-Major he ranks as Lieutenant-Colonel. V. A Surgeon ranks as Captain. VI. A Surgeon on probation ranks as Lieutenant.

#### ARMY MEDICAL SCHOOL.

##### ROYAL VICTORIA HOSPITAL, NETLEY.

*President of the Senate*.—W. A. Mackinnon, C.B., Director-General of the Medical Staff.

*Members of the Senate*.—Sir J. Fayrer, M.D., K.C.S.I., F.R.S., Physician to the Council of India; Surgeon-General Sir T. Longmore, C.B., Professor of Military Surgery; Dep. Surgeon-General Cayley, F.R.C.S., Indian Medical Service, Professor of Military Medicine; Sir William Aitken, M.D., F.R.S., Professor of Pathology; J. Lane Nottter, M.D., Surgeon-Major, Professor of

Military Hygiene; The Principal Medical Officer, Royal Victoria Hospital, Netley.

*Assistant Professors.*—Brigade-Surgeons C. H. Y. Godwin, Surgeon-Major W. F. Stevenson; Surgeons A. M. Davies and D. Bruce.

Candidates for Commissions in the Army, and in the Queen's Indian Service, proceed to Netley after passing the Examination at London. At Netley they attend the Medical and Surgical Practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic and Pathological Laboratories. The lectures and practical instruction are intended to explain the specialities of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field during action and sieges, means of transport, field hospitals, tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body, and practical points of a like kind.

## INDIAN MEDICAL SERVICE.

### REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR THE APPOINTMENT OF SURGEON IN HER MAJESTY'S INDIAN MEDICAL SERVICE.

*(Subject to any alteration that may be determined on).*

1. *Limits of Age.*—All natural-born subjects of Her Majesty, between 21 and 28 years of age at the date of the examination, and of sound bodily health, may be candidates. They may be married or unmarried. They must possess a Diploma in Surgery, or a license to practise it, as well as a Degree in Medicine, or a license to practise it in Great Britain or Ireland. (In accordance with the rule observed by the War Office and Admiralty in respect of admissions to the Medical Staff and Naval Medical Service, no single diploma or license is accepted as a qualification in both medicine and surgery.)

2. *Declaration to be submitted.*—They must subscribe and send in to the Military Secretary, India Office, Westminster, so as to reach that address at least a fortnight before the date fixed for the Examination, a declaration according to a prescribed form.

3. This declaration must be accompanied by the following documents:—

a. *Proof of age.* either by Registrar General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form of which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless.

b. A recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the service if admitted; and a certificate of moral character from a magistrate, or a minister of the religious denomination to which the candidate belongs.

c. *A certificate of registration.* in accordance with the Medical Act of 1858, of the degrees, diplomas, and licenses possessed by the candidate.

4. *Physical Examination.*—The physical fitness of each candidate will be determined previous to examination by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists.

Every candidate must also be free from all other organic disease and from

constitutional weakness, or other disability likely to unfit him for military service in India.

5. *Subjects for Examination.*—On producing the foregoing qualifications, the candidate will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows :—

|                                                                                    | Marks. |
|------------------------------------------------------------------------------------|--------|
| a. Anatomy and Physiology, . . . . .                                               | 1000   |
| b. Surgery, . . . . .                                                              | 1000   |
| c. Medicine, including Therapeutics, the Diseases of Women and Children, . . . . . | 1000   |
| d. Chemistry and Pharmacy, and a practical knowledge of Drugs, . . . . .           | 1000   |

(The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside.)

The examination in Chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the marks obtainable in each of the above *compulsory subjects*.

6. *Voluntary Subjects.*—Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be :—

|                                                      | Marks. |
|------------------------------------------------------|--------|
| French, German, and Hindustani (150 each), . . . . . | 450    |
| Natural Sciences, . . . . .                          | 300    |

The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

A number less than one-third of the marks obtainable in any of these *voluntary subjects* will not be allowed to count in favour of a candidate who has qualified in the *compulsory subjects*.

The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German.

Candidates presenting themselves for examination in Hindustani are recommended to study some recognised text-book, such as the annotated edition of the “*Taubat-un-Nasuk*,” which is the text used by candidates for the Indian Civil Service.

7. The appointments announced for competition will be filled up from the list of qualified candidates arranged in order of merit, as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

The Examiners in London will prepare a list in order of merit, with the marks affixed in the different subjects, to be transmitted to the Director-General and communicated to the Professors of the Army Medical School. If any candidate is found to be deficient in any particular subject, this shall be stated, in order that he may receive special instruction on the point at Netley.

8. *Course at Netley.*—After passing this examination the successful candidates will be required to attend one entire course of practical instruction at the Army Medical School, as Surgeons on probation, in—

- (1.) Hygiene.
- (2.) Clinical and Military Medicine.
- (3.) Clinical and Military Surgery.
- (4.) Pathology of Diseases and Injuries incident to Military Service.

These courses are to be of not less than four months' duration; but candidates who have already gone through a course at Netley as candidates for

the Army Medical Service may, if thought desirable, be exempted from attending the School a second time.

9. *Pay and Uniform while at Netley.*—During the period of residence at the Army Medical School, each candidate will receive an allowance of 8s. per diem with quarters, or, when quarters are not provided, with the usual lodging and fuel and light allowances of a subaltern, to cover all costs of maintenance; and he will be required to provide himself with uniform (viz., the regulation undress uniform of a Surgeon of the British Service, but without the sword).

10. All candidates will be required to conform to such rules of discipline as the Senate may from time to time enact.

11. *Examination at Netley.*—At the conclusion of the course, candidates will be required to pass an examination on the subjects taught in the School. The examination will be conducted by the Professors of the School.

The Director-General, or any Medical Officer deputed by him, may be present and take part in the examination. If the candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a Commission as Surgeon.

12. *Position on List of Surgeons, how determined.*—The position of the candidates on the list of Surgeons will be determined by the combined results of the preliminary and of the final examinations, and, so far as the requirements of the service will permit, they will have the choice of Presidency in India according to their position in that list.

MEMORANDUM REGARDING THE PAY, ETC., OF MEDICAL OFFICERS  
APPOINTED TO HER MAJESTY'S INDIAN FORCES.

*Passage to India.*—Surgeons on appointment will, if possible, be provided with passage to India by troop-ship; but when troop-ship accommodation is not available, passage at the public expense will be provided by steamer, or a passage allowance will be granted, if preferred. A charge for messing during the voyage will be made at the rate of 2s. a day. This payment will not include the cost of liquors, which will be charged for as extras.

*Pay previous to Arrival in India.*—The rate of pay drawn by Surgeons from the date of passing the final examination at the Army Medical School until arrival in India will be 10s. a day.

Pay at the above rate will be issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate will also be made prior to embarkation.

*Pay and Allowances when in India.*—Officers appointed to the Indian Medical Service will receive pay in India according to the following scale when not holding an appointment carrying higher pay:—

| Rank.                                     | Years' Service. | Pay and Allowances<br>per Mensem. |       |      |
|-------------------------------------------|-----------------|-----------------------------------|-------|------|
| Brigade Surgeon and }<br>Surgeon-Major. } | 25              | R. 888                            | A. 12 | P. 0 |
| " . . .                                   | 20              | 852                               | 3     | 7    |
| " . . .                                   | 15              | 677                               | 6     | 11   |
| " . . .                                   | 12              | 640                               | 14    | 6    |
| Surgeon . . .                             | 10              | 451                               | 14    | 5*   |
| " . . .                                   | 6               | 433                               | 10    | 2*   |
| " . . .                                   | 5               | 335                               | 12    | 2*   |
| " . . .                                   | under 5         | 317                               | 8     | 0*   |

On first appointment they will only come into receipt of Indian pay and allowances from the date of their arrival in India.

\* When not receiving any staff allowance.



The monthly salaries of officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive, at present, the following consolidated salaries:—Surgeon-General, Bengal, Rs. 2700; Madras, Rs. 2500; Bombay, Rs. 2500; Deputy Surgeon-General, from Rs. 2250 to Rs. 1800; Brigade Surgeon or Surgeon-Major, of twenty years' service and upwards, in substantive charge of a Native regiment, Rs. 1000, with Rs. 90 horse allowance in Cavalry regiments; Brigade Surgeon or Surgeon-Major in substantive charge of a Native regiment, Rs. 800, with Rs. 90 horse allowance in Cavalry regiments; Surgeon, above five years' full-pay service, in substantive charge of a Native regiment, Rs. 600, with Rs. 60 horse allowance in Cavalry regiments; Surgeon, under five years' full-pay service, in substantive charge of a Native regiment, Rs. 450, with Rs. 60 horse allowance in Cavalry regiments. The salaries of other substantive medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 1800 to Rs. 400 per mensem. Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem. Medical officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

*Retiring Pensions and Half-Pay.*—Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—After thirty years' service for pension, £700; after twenty-five years' service for pension, £500; after twenty years' service for pension, £365; after seventeen years' service for pension, £292. Time of service for pension will reckon from date of arrival in India. The period of residence at the Army Medical School will also reckon as service for the above pension, except in the cases of officers who have gone through the course at Netley as candidates for the British Army or Navy Medical Service. A Surgeon-General, after five years' active employment in India in that appointment, will be entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale. A Deputy Surgeon-General will, after five years' active employment in India in that appointment, be entitled to retire upon a pension of £250 per annum, in addition to the pension to which he may be entitled under the above scale.

A Surgeon-General or Deputy Surgeon-General who has completed his term of service and has reverted to British pay, may reside in Europe, at the same time qualifying for higher pension.

With a view to maintain the efficiency of the service, all medical officers of the rank of Brigade-Surgeon and Surgeon-Major shall be placed on the Retired List when they shall have attained the age of fifty-five years, and all Surgeons-General and Deputy Surgeons-General when they shall have attained the age of sixty years. In any special case, where it would appear to be for the good of the service that the officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Medical Officers are entitled to the same allowance on account of wounds and injuries received in action as are granted to combatant Officers of Her Majesty's Indian Military Forces holding the corresponding military rank.

The widows and families of medical officers are also entitled to pensions from the Indian Service Family Pension Fund, to which all Surgeons must, as a condition of their appointment, subscribe from the date of their arrival in India.

## NAVY MEDICAL DEPARTMENT.

*Admiralty, Northumberland Avenue, London, W.C.*

### REGULATIONS FOR ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

1. Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commence-

ment of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth. He must also produce a certificate of moral character up to date, and a recommendation signed by a clergyman or magistrate to whom he has been for some years personally known, or by the president or senior professor of the college at which he was educated.

2. He must be registered, under the Medical Act in force, as qualified to practise medicine and surgery in Great Britain and Ireland.

3. He must declare that he is a British subject, the son of parents of unmixed European blood; that he labours under no mental or constitutional disease or weakness, or any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; and whether he holds or has held any commission or appointment in the public services.

He must also declare his readiness to engage for general service at home or abroad as required.

He must be free from organic or other disease, and his physical fitness will be determined by a board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

The certificates of registration, character, and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed as above.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—Anatomy and Physiology (1000 marks); Surgery (1000 marks); Medicine, including the Diseases of Women and Children (1000 marks); Chemistry and Materia Medica, and a practical knowledge of Drugs (1000 marks). (The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of Surgical Apparatus, and the examination of Medical and Surgical patients at the bedside. The examination in Chemistry will be limited to the elements of the Science, and to its application to Medicine, Pharmacy, and practical Hygiene; and the examination in Materia Medica will include a knowledge of the physiological actions and therapeutical uses of Drugs.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the maximum marks in each of the above *compulsory subjects*.

5. Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be:—French and German (150 each), 300 marks: Biology, Physics, and Physical Geography (100 each), 300 marks. A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects*.

The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German.

The Natural Sciences will include Biology, Physics, and Physical Geography.

6. The appointments announced for competition will be filled up from the list of qualified candidates arranged in the order of merit as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

7. Successful candidates, immediately after passing the examination, will receive Commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, etc., at Haslar Hospital.

The full and half-pay per day of Naval Medical Officers is in accordance with the following scale:—FULL-PAY: Surgeon—On entry, 11s. 6d.; after 4 years' full-pay service, 13s. 6d.; after 8 ditto, 15s. 6d. Staff Surgeon—On promotion, £1, 1s.; after 4 years' full-pay service in rank, £1, 4s. Fleet Surgeon—On promotion, £1, 7s.; after 4 years' full-pay service in rank, £1, 10s.; after 8

ditto, £1, 13s. Deputy Inspector General, £2, 2s. Inspector General, £2, 15s. On first appointment to the service, medical officers will receive full pay from date of appointment, but subject to the provisions of Art. 1255, clause 2, of the Queen's Regulations, 1879. HALF-PAY: Surgeon—Under 2 years' full-pay service, 6s.; after 2 years' full-pay service, 7s.; after 4 ditto, 8s.; after 6 ditto, 9s.; after 8 ditto, 10s.; after 10 ditto, 11s. Staff Surgeon—On promotion, 12s.; after two years' full-pay service in rank, 13s.; after 4 ditto, 14s.; after 6 ditto, 15s. Fleet Surgeon—On promotion, 17s.; after two years' full-pay service in rank, 18s.; after 4 ditto, 19s.; after 6 ditto, £1. Deputy Inspector General—On promotion, £1, 5s.; after 2 years' full-pay service in rank, £1, 7s.; after 4 ditto, £1, 9s. Inspector General, £1, 18s.

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## Part Fourth.

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### MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

*Berlin. Klin. Wochensh.*, No. 31, 1890.—Dr Arnaldo Cantani recommends abundant drinking of ice-cold water and cold water enemata to reduce the temperature in fevers. He finds that in exanthematic typhus the greatest reduction is obtained by the systematic drinking of the water, and in abdominal typhus that rectal injection answers better. In exanthematic typhus his patients are encouraged to drink in twenty-four hours from 5 to 8 litres of ice-cold water, and the windows of the sick-room are kept always open, with the result that the duration of the disease is markedly shortened: temperatures of 41° Centigrade falling to 37° in a few days.

In abdominal typhus, on the other hand, great quantities of water introduced by the mouth have not the same result; the patient cannot use great daily quantities, or bear them long, therefore he uses cold enemata. A great number of observations has learned him that after each injection of 2 litres of cold water the axillary temperature falls within half an hour about six to eight tenths of a degree, and that the reduction continues for two or three hours. The water injected at a temperature of 11° Cent. was usually discharged in 10–30 minutes, but its temperature had risen to 35°–37° Cent., according as the temperature of the patient was higher or lower, and to the length of time the enema was retained.

If one considers that part of the 2 litres of water at 11° C. is returned from the bowel at 36° C., while another part heated by the blood is discharged by the kidneys, one must see that a considerable loss of heat must have taken place in the bowel and in the blood.

The two methods have a weighty influence on the urine. Both increase its quantity and lessen its specific gravity. Much drinking gives rise to a true polyuria, the urine is pale, its sp. gr. 1008–10. Naturally the enemata have less effect, because all depends upon

whether more or less is retained in the bowel and absorbed into the blood, which again depends upon whether the injection has penetrated to higher or lower intestinal coils; generally, however, the quantity of urine is increased. This urinary increase evidently shows that the cold water is absorbed, and that the body and blood are cooled, and more certainly than by other hydropathies which operate only on the skin.

It is just this modifying influence over urine and blood which give these inner reductions of body heat the preference over the more commonly used hydro-therapy of the skin. They cool the internal parts; they influence the places of increased heat-formation without touching the source of heat-production or paralysing the vital heat-producing activities of the tissues; they wash out the blood and tissues, and free them of possibly accumulating ptomaines; they call forth no new reaction on the side of the organism, and do not allow the temperature of the patient to rise higher than it formerly was; after their action has ceased, they have no unpleasant secondary effects; at most, and seldom, a slight tendency to shiver during the injections. Disinfectants, astringent and calmative medicines, can also be used with the enemata.

Apart from mere cooling, meteorism is prevented by the clysters, or, if present, it is removed after a few applications; other intestinal phenomena of ileo-typhus are also reduced to a minimum, and the course of the fever mildened and shortened.

*Ibidem.*—Dr Koranyi of Buda-Pest examines the influence of clothing on the production of movable kidneys. He has experimented on living and dead, and comes to the conclusion that high-heeled shoes and the weight of the female clothes have more to do with the dislocation than any other factor.

*Ibidem.*—Dr Rosenstein contributes three cases of aortic aneurism in which the occasional difficulties and failures of diagnosis are well illustrated. Clinically the first case offered all the phenomena of chronic pneumonia of the upper part of the left lung. Repeated hæmoptysis of greater or smaller amount, with no cardiac symptoms, made it probable that it was of tubercular character; the fact of no tubercle bacilli being found in the sputum was not decisive against this view, since their demonstrated presence only gives *certainly* to diagnosis. And yet there were things in the case opposed to this view. There was no fever, physical symptoms exclusively on one side, and constant complaint of pain in the left arm, pointed to the possibility of a compression as well of lung as of nerves, without, however, allowing any recognisable affection of the circulatory apparatus to be suspected. The want of all murmurs over the site of the aneurism was explained at the post-mortem by the way the fibrinous deposits filled the sac.

In the second case the aneurism was very large, and at the time of observation had caused no abnormal auscultatory phenomena.



This was explained by the fact that at the autopsy the aneurism was healed in an ideally perfect way, leaving a smooth-walled large lumen for the passage of the blood stream. It was more surprising that during the time the aneurism was developing no extra labour of heart seemed to have been needed, for there was no hypertrophy of the left ventricle.

In the third case, a man of 85 complained of difficulty of swallowing, loss of appetite, constipation, and emaciation. Objective examination showed patient to be free of fever, and lungs and heart showed no anomaly. The sound showed that there was an obstruction in the œsophagus about 30 cm. from the teeth. Solids could not be swallowed, and liquids regurgitated. In the abdomen, close above the navel and to the left, a pear-shaped tumour, 6 cm. long and 4 cm. broad, was felt; it was slightly movable, could be shoved upwards, and pulsated from *behind forwards* only.

The idea that this visible and palpable swelling was an aneurism seemed natural, but there was no delay of the crural pulse compared with the radial, and there was no expansile pulsation in all directions. Under these circumstances, it seemed a just conclusion that, as there was an undoubted œsophageal carcinoma, the abdominal tumour was a cancerous pylorus. Against this view, moreover, neither the deeper position of the tumour nor its site on the left of the linea alba, nor its small movability could decidedly declare. The motion allowed by pyloric tumours may be extensive or not; their position may vary much, and although oftenest on the right of the linea alba, they are not seldom on the left.

At the autopsy the pylorus was found intact; in the œsophagus, at the crossing of the bronchial tubes, a carcinoma of hard consistence was found; the abdominal tumour was aneurismal, was seated on the anterior wall of the aorta descendens a few centimetres above the origin of the iliac arteries. The sac was filled with coagulum, which was soft in the centre only. In this case, also, abnormal auscultatory phenomena could not be produced by the aneurism. It is interesting to note that the firm sac had communicated to it from above the same pulsations that one can feel in tumours which lie above large vessels. The most important differential sign, expansile pulsation, was here wanting.

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## PERISCOPE OF SYPHILOLOGY AND GENITO-URINARY DISEASES.

By FRANCIS CADELL, F.R.C.S. Ed.

SOME PRACTICAL POINTS IN THE TREATMENT OF SYPHILIS.—Dr R. W. Taylor thinks it impossible to over-estimate the great advance made in the treatment of this disease by establishing the fact that small doses given over long periods was more radically

curative than the old-time heroic dosage, or of the three to six months' courses. He then refers to the advantage of the hypodermic method of administration. The hope of aborting the disease gave rise to two methods,—the first, that of excision of the chancre; and the second, by active mercurial dosage during the primary period of the disease. Both methods have been found useless. He does not begin the mercurial treatment until the beginning of the secondary stage. The three systems of treating syphilis now in vogue are as follows:—The expectant, or symptomatic; the continuous, or so-called tonic treatment; and the treatment by interrupted courses. He disapproves both of the expectant and the continuous treatment, and has found that the interrupted but carefully regulated courses of mercury alone at first, and of mercury and iodide of potassium later on, is the one most preferable, most satisfactory and practicable to both physician and patient, and the one by means of which we may almost positively promise a cure to any one with ordinary health who will systematically submit to and follow it up. The systematic treatment of the disease presupposes a careful hygiene and an orderly and well-rounded life during its continuance. The preparations of mercury he recommends are the green iodide and the tannate of mercury. He thinks that the bichloride should only be used hypodermically. The dose of the proto-iodide of mercury should be from one-fourth, or one-fifth to one-third, or half a grain. This may be given from three to five times daily. The dose of the tannate of mercury is from one-half to one grain. During the early secondary period is the most important time for giving the remedy, which should be continued for from three to six months if necessary. In most cases, at the end of three months, during which the remedy should be taken quite steadily, the patient's condition will be found to be so reassuring that a stoppage of the dose may be allowed for one, two, or even three weeks. The next course may last for but two or three and a half months, when four weeks' freedom may be granted from drug taking. During the second year's treatment, iodide of potassium is combined with mercury. He prefers mercurial inunctions as an adjuvant reserve and emergency resource. The early rashes of syphilis are best treated by mercurial inunctions, both during their active and chronic stages. Thus, if the erythematous syphilide is exceptionally severe and persistent, it is well to leave off internal pill dosage and use mercurial inunctions. When the eruption has disappeared the pills are resumed, and the ointment discontinued. Inunctions should also be made over enlarged lymphatic glands, vessels, and bloodvessels when they are abnormally hyperplastic. A similar treatment is indicated in early papular syphilides. Regional inunctions are also recommended in early and late meningeal, cerebral, and cephalalgic symptoms. In cases of syphilides with much pustulation and encrustation, the common antiseptic remedies are better, for a time, than mercurial

inunctions, as they are due to microbial complications. Local nodules, mucous patches, and condylomata should be cleansed and dusted with calomel. For hypodermic use a pure watery solution of the bichloride of mercury is considered the best. Solutions containing one-twelfth and one-eighth of a grain dissolved in ten drops of water may be taken as standard doses. These injections will cause the rapid subsidence of specific lymphatic swellings, and of localized and regional eruptions. Cephalalgias may also be so treated. Where mercury taken by the mouth acted as a general depressant, hypodermic injections have relieved the condition. Osseous, bursal, fascial, and articular lesions of syphilis, particularly the earlier ones, are often much benefited by sublimate injections. It is well at the same time to give iodide of potassium in full and increasing doses. Fumigations are often of much use in stubborn localized and even general eruptions, particularly in the chronic scaly stage of early and late eruptions, and also in almost all cases of pustular, ulcerative, and serpiginous syphilides.—*Medical News*, December 7, 1890.

“CORROSIVE SUBLIMATE IN GONORRHŒA.—I notice that Dr Salaboli, in the *Raccogliore Medico*, xiii., 1889, strongly recommends a solution of corrosive sublimate both in acute and chronic gonorrhœa. This is another illustration of how little new there is under the sun, and of the justness of the observation, that the progress of medicine, and especially of therapeutics, is, to a great extent, circular. In a paper on ‘Certain Points in the Pathology and Treatment of Gonorrhœa’ by me, published in the journal of date April 23rd, 1870, the following sentences will be found:—‘Of late I have used the bichloride of mercury in the most obstinate cases of gleet with the best results. It would be extending these remarks to a greater length than I contemplated to cite cases. Suffice it, therefore, to say, that over and over again I have succeeded in curing gleet with this remedy when the most usually employed agents had failed, both in my own hands and those of others.’”—Dr D. Campbell Black, *British Medical Journal*, March 29, 1890.

ACQUIRED SYPHILITIC NERVE DEAFNESS CURED WITH PILOCARPINE.—“J. R. was admitted to hospital on December 26th, 1889, with syphilitic ulceration of the pharyngeal arch, of late secondary type—throbbing in ear and deafness. He could just hear a watch pressed to his right ear, but the sound was not conducted through the cranial bones when the watch was placed over them. He had been deaf for three weeks, but never before. I commenced with one-eighth of a grain of pilocarpine, injected into the arms alternately. On December 31st note says,—‘He hears watch at 4 inches from ear; conduction improved through cranial bones; throbbing less; bowels loose; sweats well; is still taking hydr., which he commenced on admission.’ On January 6th he could hear the watch at 6 inches from the ear; bone conduction good, except in parietal region over ear, where watch is not heard.

On January 16th he heard watch at 8 inches; watch sounds conducted all over head, and he heard general conversation well."—E. J. Erskine Risk, L.R.C.P. and M.R.C.S., Surgeon A.M. Staff, *British Medical Journal*, July 12, 1890.

THE TREATMENT OF GONORRHOEA BY SALOL.—Mr J. Ernest Lane, F.R.C.S., Surgeon to Out-Patients, London Lock Hospital, relates his experience of salol in the treatment of gonorrhœa in the *Lancet* of 22nd March. He writes: "I have for some time past been prescribing salol in the out-patient department of the London Lock Hospital, and am now enabled to give the results of its administration in fifty cases of gonorrhœa. I have tested the value of the drug in urethral discharges at all stages, in some cases relying solely upon its use, in others employing an astringent injection in addition. An analysis of the fifty cases show that six were cured, twenty-four showed considerable improvement, in fifteen cases no change either for better or worse was noticed, while in five cases the symptoms were aggravated. The doses used were from 5 up to 30 grains, taken three times daily. The beneficial effects of salol manifest themselves in a very short time. When improvement takes place the symptoms show an abatement in from two to seven days; in acute cases the painful micturition is early alleviated; in cases of a more chronic nature the discharge is materially lessened in this time. In ten cases an injection was employed in conjunction with salol. This was when I commenced my trial of the drug, which I gave at first in 5 grain doses. I subsequently increased the dose to 10, 20, and in a few cases to 30 grains, and relied upon its internal administration without the assistance of injections. Out of forty cases so treated an improvement was noticed in twenty within a week, while six were completely cured. Salol is not a mechanical mixture of carbolic and salicylic acids, but appears to be a compound of the nature of an ethereal salt, since phenol can, with some slight difficulty, be obtained from it on saponification. The potassium salt left after the treatment of salol with caustic potash gives, with hydrochloric acid, an acid which is either salicylic or one of its isomers. Four hours after administration by the mouth of 20 grains of salol, traces of carbolic and distinct evidence of salicylic acids, combined with other elements, were found in the urine. In one case the urine was blackened as in carboloria, the patient at that time taking 30 grains three times a day. It is by the action of the pancreatic juice that salol is said to be split up into carbolic and salicylic acids. Of this change I was unable to procure any sufficient evidence after having added pancreatine to a mixture of salol. In salol we have, in my opinion, an addition of considerable value to our list of remedies for gonorrhœa. Its effect is apparently produced by the action of the urine upon the inflamed urethra, since that fluid contains salicylate and carbolic acids in combination, probably as salicylurate and sulphocarbolates. It may be given in doses of from 10 to 20 grains three times daily at



any stage of the disease, and in chronic cases an astringent injection will materially hasten the cure. The effect of the drug does not appear to be enhanced by larger doses than 20 grains. When the amount was increased to 30 grains the urine became blackened, and the symptoms did not show any proportionate improvement. I commenced by giving 5 grain doses, but this was soon discovered to be too small a quantity, and my results would, I doubt not, have been more favourable had I commenced its administration with a freer hand. I am indebted to Mr R. J. Carter, House Surgeon to the Male Lock Hospital, for his careful investigation into the chemical properties of the drug, and for notes of the progress of the cases so treated.—*The Medical Press*, 26th February 1890.

**SALOL IN VESICAL CATARRH.**—Dr B. Arnold, of Stuttgart, recommends, in the *Therap. Monatsch.*, No. 7, 1888, the use of salol in catarrh of the bladder in the course of paralysis of the detrusors. In the case of a man, æt. 80, who suffered from paralysis of the bladder, and who in consequence of frequent catheterization had cystitis with ammoniacal urine, the drug was employed. Three grammes of salol *pro die* sufficed to keep the fermentative process completely under, and to keep the urine quite clean and acid. The dose was later on reduced to 2 grammes daily (30 grains). The daily dose of 3 grammes was never exceeded. The salol was well borne. The tongue, which was coated, cleaned decidedly under the treatment. Up to the date of the communication 149 grammes of salol had been given without any injurious consequence.—*The Medical Press*, 26th February 1890.

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## SURGICAL PERISCOPE.

By A. G. MILLER, F.R.C.S.E.

**EXPLORATORY LAPAROTOMY.**—Dr Henry O. Marcy of Boston strongly urges an exploratory laparotomy in all abdominal cases where the diagnosis is doubtful. He records eleven cases in which he opened the abdomen without doing any further operation. All recovered from the operation, and most were benefited. From his experience he argues that laparotomy is not an operation that causes risk to life, if properly performed.—*Journal of Amer. Med. Assoc.*, January 26, 1890.

**THE IMPORTANCE OF WASHING OUT THE PERITONEAL CAVITY AS A MEANS OF SECURING A NATURAL DISPOSITION OF THE INTESTINES AFTER ABDOMINAL SECTION.**—Mr J. D. Malcolm (London) says:—"It has occurred to me that in the practice of washing out the peritoneal cavity we have an important means for promoting a natural adjustment of the intestines, and so avoiding the dangers of obstruction of the bowels in these cases. For if, in finishing the process of washing out the peritoneum, the abdominal cavity be distended with fluid, the intestines must be floated up towards the highest level of the cavity. As the intestines are thus buoyed up

by the fluid, it is obvious that changes in the relative positions of the various coils must be greatly facilitated, while the traction which is at the same time brought to bear on the mesentery must tend to straighten out that membrane in the direction between its attachments to the posterior abdominal wall and to the bowel, and so to undo any acute twists which may exist in it. The mesentery and bowel will thus be thrown into natural folds. If the fluid be then simply permitted to flow out of the abdominal cavity, or be carefully sucked out of the pelvis by means of a tube without any sponging or other mechanical disturbance, the intestines will tend to settle down in a natural position, just as they do when an ascites is relieved by tapping. In no other way can so satisfactory an adjustment be assured."—*Lancet*, 11th January 1890.

DR J. WILLIAM WHITE of Philadelphia reports a successful case of enormous vesical calculus removed by suprapubic cystotomy. The stone weighed  $9\frac{1}{2}$  ounces. Its circumference was  $8\frac{1}{2}$  and  $7\frac{1}{2}$  inches. The patient, æt. 55, made an uninterruptedly good recovery. He was well six months after the operation. This is one of the very largest calculi ever removed successfully.—*Annals of Surgery*, Jan. 1890.

ANTISEPTIC VALUE OF IODOFORM.—As the result of carefully-performed experiments, Dr A. Ernest Maylard of Glasgow has come to the following conclusions:—Iodoform acts as a germicide, but its action is weak. It retards the growth of some organisms. If in considerable quantity, it destroys pyogenic organisms in the course of time (four to nine days). It seems to have no influence on bacterium termo. "Practically iodoform, when used clinically, is always applied largely in excess of the existing microbes, and therefore capable of exercising advantageously its antiseptic properties." "Its supposed or acknowledged value in the wards is borne out by experiments in the laboratory."—*Annals of Surgery*, January 1890.

PNEUMOTOMY.—Dr A. C. Lamothe Ramsay of St Cloud, Minn., U.S.A., reports four cases of operative interference with the lung. The first was a case of gangrene of the lung following pneumonia. A portion of the seventh rib was removed, adhesions were found between the lung and pleura, the lung was incised, and a drainage-tube left in. The cavity in the lung was syringed out only once, as the procedure caused severe coughing. The patient, a young Irishman, was discharged cured in six weeks. The second case was one of gunshot injury of the chest, which resulted in septic pyo-pneumothorax. Portions of the third and seventh ribs were removed. The lung was also incised, and shreds of clothing removed. The patient made a good recovery after three months. The third case was one of pulmonary abscess following measles. The abscess was opened by the cautery after the removal of some portions of rib. The patient (girl, æt. 17) did well at first, but died of septicæmia after two months. The fourth case was one of abscess of the lung following typhoid fever. The abscess was treated the

same way as case three. The patient (an Irishman, æt. 29) did well, and was discharged cured in less than a month.—*Annals of Surgery*, January 1890.

**NAEVUS TREATED BY COLLODION.**—"Mr Thomas showed three cases of nævi treated by the application of collodion—one in the back, another in the parotid region, and a third in a young infant over the anterior fontanelle. Collodion was painted over them and the surrounding skin, the application being usually carried out by the mother. In all considerable improvement had resulted, rendering further treatment by operation unnecessary. He pointed out the absolute freedom from risk or danger, and the advantages it offered in some situations where almost all methods were unsafe."—Report of Meeting of Midland Medical Society in *Birmingham Medical Review*, January 1890.

**NEW OPERATION FOR EMPYÆMA.**—Dr Subbotin proposes to render portions of several ribs movable by cutting them through at two points without opening the pleural cavity. The fluid is evacuated in the usual manner, and the movable portions of rib depressed so as to contract the space. The depressed portions may become adherent to the collapsed lung (*Vratch*, 1888, No. 45).—*Annals of Surgery*, February 1890.

**METHOD OF REMOVING THE DEFORMITY FROM PROMINENT EARS.**—To accomplish this Dr W. W. Keen of Philadelphia removes an elliptical portion of skin and a wedge of cartilage from the back of the ear. The resulting cicatrix is not easily discoverable, and improves the appearance of the ears from the front view very considerably. Dr Keen reports a case with illustrations.—*Annals of Surgery*, January 1890.

**COMPENSATORY GROWTH OF LONG BONES AFTER JOINT EXCISIONS.**—Ollier of Lyons noticed, in some cases after joint excision, less difference between the sound and diseased limbs than he expected. He made experiments on young animals. Fixing the centre of each humerus by driving a nail through it, he resected the elbow-joint on one side. In every case the nail was found to be further from the upper epiphysis on the side operated on than on the sound side. This result he attributes to increased (compensatory) activity of the only epiphysis left.—*Annals of Surgery*, Jan. 1890.

**NERVE SUTURE**, by E. Etzold, M.D.—Experiments on animals have shown that nerves do not heal either by primary or secondary intention, and that divided nerves are regenerated by proliferation of the central end. Clinical observations have also shown that the proximal portion of the divided nerve is regenerated more completely and at an earlier period than the distal extremity. The return of sensibility is of no service in estimating the degree of nerve regeneration. The symptoms which permit us to assume that nerve regeneration has taken place are—1, Active muscular

contractions; 2, the disappearance of atrophy, especially muscular atrophy; 3, the late appearance of improvement; 4, the faradic irritability of previously paralyzed muscles. The galvanic current has only slight value in the diagnosis of nerve regeneration. Spontaneous healing of divided nerves is very uncommon. The prognosis in injuries of the nerves is unfavourable when the injury is high up, even if nerve suture is resorted to. The formation of an extensive connective-tissue cicatrix prevents the regeneration of the nerves. It is the duty of the surgeon to resort to nerve suture in every case of accidental division of the nerves. In the performance of this operation the avoidance of all irritation, the most stringent antiseptis and perfect hæmostasis are the main conditions which secure success. If symptoms of stasis follow the injury to the nerve, elevation of the parts and the employment of massage after healing of the wound are indicated. When the wound has healed, direct galvanization of the scar and massage should be employed. It has not been decided whether the application of electricity to the parts supplied by the injured nerve limits the extent of degeneration and hastens regeneration. Peripheral paralyses are to be treated by massage and passive movements. The use of the limb after the injury appears to have a favourable effect on recovery."—*International Journal of Surgery*, September 1889.

**DISADVANTAGES OF COCAINE IN SURGERY.**—It retards union of wounds to a slight degree. The amount required to produce anæsthesia is very variable and uncertain. It is dangerous in children under 10 years. Fainting may occur from the drug, or from the patient seeing the operation. Excitement and convulsions may occur.—Dr J. A. Wyeth of New York, *New York Medical Journal*, September 21, 1889.

**THE OPERATIVE TREATMENT OF DEFORMITIES OF THE ANKLES AFTER FRACTURE AND OF FLAT-FOOT** (By Prof. Trendelenburg, Bonn).—In badly united fractures at the ankle the deformity, although varying in degree, is essentially the same. The foot is displaced outward, so that in standing the axis of the leg if prolonged downwards does not pass through the middle of the sole of the foot, but strikes the internal border of the foot, or even further inwards. The foot is pronated, the arch flattened, and the appearance is much like that of a marked case of flat-foot. As regards treatment, transverse osteotomy of the tibia and fibula, with the chisel applied just above the ankle, readily removes the deformity and enables us to restore the leg and foot to its normal position. The resemblance of these cases to those of flat-foot, and the excellent results obtained by osteotomy in the former, led the author to employ the same procedure in cases of ordinary (non-traumatic) flat-foot. After transverse osteotomy just above the ankles, the foot could be readily displaced inwards to its normal position, and the pronation was also thereby corrected. The foot was retained for five weeks in a plaster-of-Paris bandage. Trendelenburg has thus far per-



formed supra-maleolar osteotomy in five cases, and in each one with striking success. The arch of the foot was restored, the foot returned to its normal position, and the difficulties in walking were completely removed.—*International Journal of Surgery*, Sept. 1889.

IDENTITY OF ERYSIPELAS AND ACUTE LYMPHANGITIS.—Drs Verneuil and Clado conclude from their experiments—(1), That erysipelas and acute lymphangitis are two forms of one and the same affection; (2), the same microbe occurs in both, and is readily found, cultivated, and inoculated in animals.—*International Journal of Surgery*, June 1889.

DANGER OF GIVING CHLOROFORM BY GAS-LIGHT.—Ball adds to the cases already reported a number of others, showing the disagreeable and even dangerous symptoms that may arise, both to the patient and the bystanders, in using chloroform by gas-light. A strong irritant is produced under such circumstances, which has been found to be carbon oxychloride, or phosgene gas. The symptoms are paroxysms of coughing, a sense of choking and irritation in the throat, giddy feeling, and, after a time, a strangling and burning sensation over the larynx.—*Times and Register* (American), 6th July 1889.

## Part Fifth.

### MEDICAL NEWS.

EXALGINE.—Mr B. Kuhn of London has sent us a specimen of Brignonnet & Naville's Exalgine. This is one of those new drugs destined to take a permanent place in the *armamentarium* of the physician. As a subduer of pain it is exceedingly valuable, and, as clearly demonstrated by Professor Fraser, these good results may often be obtained by the small dose of half a grain.

In our number for August 1889, under the department for "Periscope," we gave an extract showing the excellent results obtained from the use of this drug. Further experiments only tend to confirm the good opinion formerly expressed, and we have much pleasure in again directing the attention of the profession to this new remedy. The specimen sent by Mr Kuhn we can confidently recommend.

### OBITUARY.

JAMES MATTHEWS DUNCAN, M.A., M.D., LL.D., F.R.S., ETC.

It was with the deepest feelings of grief and regret that we heard, early last month, the sad news, so unexpected by most of us, of the death of Dr Matthews Duncan. We feel that a great man has passed away from among us: a great, strong, capable man, the like of whom we shall not soon see again. His appearance was eminently characteristic of the man,—a massive, broad head, with a firm,

mouth and a strong, square chin, supported by a well-made, stout figure, rather over the medium height, was a faithful index of the strong, earnest, energetic character within.

Dr Duncan believed, and acted up to the conviction, that work, hard, honest work, was the mission which every man was sent into the world to perform, and he had no pity on those who neglected it. His own capacity for work was enormous, and it may safely be said that he was never happier than when his every hour was filled to the full with writing, teaching, or the labours of an extensive practice; that he was able to do all that he did in all these directions was the immediate outcome of a regular and methodical habit of mind. Punctual to a moment in everything, as soon as one piece of work was over he was ever ready to put his hand to the next. By means of this order and regularity he was enabled to overtake a very large correspondence, his letters being always answered the day they were received, and answered in a few terse, vigorous sentences, into which he managed in the smallest space to pack a great deal of meaning. This accuracy and terseness he carried into his lecturing and writings to an extent which sometimes made his style appear bald and rugged; but no one who took the trouble to read his words carefully could ever complain that they did not contain exact and definite ideas. His mode of working was peculiar to him. He habitually noted, at the moment, references which he came across in the course of his extensive reading, on interleaved books, bearing on the matter in hand. When he had determined to write upon any subject, he carefully thought out his own opinions, looked up the opinions of others, and then for a time allowed the whole to seethe and simmer in his mind: when the matter was mature, he would sit down and write the paper straight off with very few alterations or corrections.

Dr Duncan had a deep and abiding love of science, which he took every opportunity, both in speech and writing, of impressing upon others, whether students or fellow-practitioners; believing, as he did, that the progress of science is the best, if not the only, source of progress in the art of Medicine. Looking at Medicine always from a scientific standpoint, and basing his own practice as far as possible on scientific methods, he had rather scant respect for the merely "practical man," however skilful; and he had no great faith in drugs. His own views on the relations of science to Medicine are thus summed up in one of his speeches:—"Without hard work it is impossible to obtain extensive knowledge, without extensive knowledge there can be no such thing as science, and without all available science you may have a clever physician, but not a really great one."

In all his opinions and convictions Dr Duncan was eminently a strong man—the

"Firmum et tenacem propositi  
virum"

of the poet. Coming to his conclusions after due deliberation, he held them in a grasp of iron, and defended them with an energy and skill that generally carried the day. He had, besides, a clearness of judgment and a practical wisdom which are the heritage of but few. Straightforward and thorough himself in everything, he had a scorn of quackery, and an impatience of anything savouring of humbug or pretence, which led him to attack with all his force practices of which he disapproved, or views which he believed to be unsound and unscientific. His controversial writings, however, were always sustained by a dignity which never descended to personality or bitterness.

As a teacher he was singularly successful. No student could fail to be impressed by his intense zeal and earnestness, and by the slow, measured exactness of his utterances—not a word too much or too little—both at the bedside and the lecture-room. His classroom, full to overflowing, and invariably orderly and attentive, was strong evidence of the powerful impression his personality made upon his hearers.

And what shall we say of Duncan as a friend? That he was stanch and true, a wise, prudent, and just adviser in all matters brought under his ken, is known to all who enjoyed his personal intimacy; and he was ever ready to listen to and to help those who sought his assistance. Beneath a somewhat brusque and solemn manner he concealed a depth of tenderness and kind-heartedness which sorrow or suffering never failed to bring out; and this was the secret of the regard and affection in which he was held by the great majority of his patients, rich and poor alike. So long as there was anything really wrong, nothing could be kinder and more considerate than his words and manner, while his wide knowledge and great skill, combined with his personal characteristics, inspired in his patients an entire and enduring confidence that made them his friends for life. To some few his plain and outspoken words gave offence; for if he thought that there was little or nothing wrong, or that treatment, and especially local treatment, was undesirable, he never failed to say so.

As a consultant he was admirable. Minute in his investigation of a case, and cautious in coming to his conclusions, when once his mind was made up he was firmness itself, and the advice given was clear, decided, and exact.

Many of us will still remember the blank that was felt when he left Edinburgh for London; and now that he has gone for ever, we all feel that the world is the poorer for the loss of a great and wise physician and an honest man.

James Matthews Duncan was born in Aberdeen, in the year 1826, of parents whom he describes himself as being "Calvinistic and thrifty, and above all devoted to the education of their children." He was educated at the grammar school presided over by the late Dr Melvin, and at Marischal College, where he graduated in 1843 as M.A., and as M.D. in 1846. He studied Medicine for some time in Edinburgh, where he distinguished himself especially

in the class of Midwifery. After graduating he spent six months studying at the Medical School of Paris. Returning to Edinburgh in 1847, he became Private Assistant to the late Sir James Simpson, with whom he was associated in the investigation of numerous anæsthetics, and he is said to have been one of the first who inhaled chloroform. After leaving Simpson, four years later, he settled down in practice in Edinburgh, and became a Fellow of the Royal College of Physicians in 1851. He soon began to acquire a considerable practice, but from the very first he spent a large portion of his time in experimental investigation and in writing. As time went on his name became widely known as that of an original thinker and accurate observer in Obstetrical Science, and he speedily acquired a great reputation as an able and trustworthy physician. He had a large share in the establishment of the Royal Hospital for Sick Children, of which he was one of the original Physicians, and subsequently Consulting Physician. In 1853 he began a course of systematic lectures on Midwifery and the Diseases of Women, which were attended with ever-increasing success; and in the year 1861 he was appointed Physician for the Diseases of Women to the Royal Infirmary. It was in the small ward of eleven beds, No. 16 in the old house, with its very tiny retiring-room, that much of his best work and teaching was done. He had not at this time a large following of students; the fame and ability of Sir James Simpson, with whom he had had a serious quarrel, were more attractive to them. But the six or eight earnest students, which was all the little room could hold, made up in some degree in zeal and devotion to their master.

His practice continued to increase, and after his removal to Charlotte Square he had a large and lucrative business. The death of Sir James Simpson in 1870 led to his being a candidate for the vacant Chair of Midwifery in the University; and though his reputation both at home and abroad was second to that of none in Great Britain, the electors thought fit to pass him by. This could not fail to be a deep disappointment to one who was fully conscious of his own powers and eminent fitness for the post; but whatever he felt he made no sign, but went bravely on with his accustomed work. In the year 1877, when at the height of his fame as the leading Obstetrician in Scotland, he was invited to occupy the Chair of Midwifery in the Medical School of St Bartholomew's Hospital, London, and to become Obstetric Physician to the Hospital. This post, after careful consideration, he accepted; and, to the deep regret of all his Edinburgh colleagues and friends, left Edinburgh for London in October of that year. His success in London was rapid and complete, and he soon became the leading authority on his branch of the profession; while the large classes he attracted were testimony to the efficiency and value of his teaching. Honours of various kinds were bestowed upon him. He became an F.R.C.P. of London, and F.R.S. of London and Edinburgh; LL.D. of the Universities of Edinburgh and Cambridge. The University of



Dublin made him an honorary M.D. He held the office of Examiner in Midwifery in succession to the Universities of Oxford, Cambridge, and London, and was nominated by the Crown as a member of the General Medical Council. He was President at various times of the Obstetrical Societies of Edinburgh and London, and was an honorary member of very many scientific societies at home, on the Continent of Europe, and in America. He continued to work with his accustomed vigour, and even during the holiday season he spent a good deal of his time in writing. He loved work and a fully occupied time so much that he did not know how to take a real holiday. He generally enjoyed excellent health until two winters ago, when he was much troubled with eczema. For the last four months his friends noticed a gradual change coming over him. He became much thinner and grayer, and was easily tired, until at length, in the early summer, he had to give up teaching and hospital work. Feeling himself unable for the fatigue of the Berlin Congress, which he had hoped to have attended, he went to Blankenberghe in Belgium, and subsequently to Baden-Baden. Here he had, about the middle of August, a very serious attack of angina pectoris, and was thought to be dying. He rallied, however, and was so far better that all arrangements were made for bringing him home on the 2nd of September. But it was not to be. He died quite suddenly and unexpectedly on the afternoon of the 1st. His remains were brought to London by the same train he had intended to travel by, and were interred in the Islington Cemetery, Finchley, on Monday, September 8.

Dr Duncan married in 1860 Miss Jane Hart Hotchkis, daughter of the late Mr Hotchkis of Castlemilk, Dumfriesshire. Mrs Duncan and five sons and four daughters survive him.

Dr Duncan was a most voluminous contributor to professional literature. From 1851, when his first paper "On Spurious Menstruation in newly-born Infants" appeared, to the present year he poured forth a great number of valuable and important writings, both scientific and practical. He has left a deep mark on the science of Obstetrics, and much of his original work is embodied in the teaching of to-day. We might mention as some of the more important subjects with which his name is identified—the development of the female pelvis; the cervix uteri during pregnancy; the uterine mucous membrane after labour; many points in connexion with the mechanism of labour; the mode of detachment of the placenta; lupus and canceroid of the vulva; the production of inverted uterus; the mortality of childbed; the physiology of placenta prævia; inflammations in the pelvis; and the whole subject of fertility, sterility, and allied topics.

Some of these papers were reprinted in his published works, of which the following is a list:—

1857, Translation of "The Uræmic Convulsions of Pregnancy, etc.," by Dr Carl Braun; 1862, Translation of "Contributions to the Knowledge of Osteomalakia," by Prof. C. C. Litzmann; 1866, Fecundity, Fertility, Sterility,

and other allied topics (a second edition of this appeared in 1871); 1868, *Researches in Obstetrics*; 1869, *A Practical Treatise on Perimetritis and Parametritis*; 1870, *On the Mortality of Childbed and Maternity Hospitals*; 1875, *Contributions to the Mechanism of Natural and Morbid Parturition*; 1879, *Papers on the Female Perineum*; 1879, *A new edition, with additions, of West on the Diseases of Women*; 1879, *Clinical Lectures on the Diseases of Women* (successive editions of this work, each greatly enlarged, appeared in the years 1883, 1886, and 1889); 1884, *Sterility in Women*.

In addition to these he published numerous addresses delivered at various professional meetings, among the most interesting of which are "The Father of Medicine," read to the Royal Medical Society in 1876, and "The Life of William Hunter," the Edinburgh Harveian address of the same year.

Dr Duncan's style of writing is strong and lucid, but not elegant. His sentences are short and vigorous, and every word is meant to tell; this compression makes some of his works, especially that on the Mechanism of Parturition, far from easy reading. His opinion on any of the subjects with which he dealt was always one that had to be reckoned with, and already much of his work has found its place among the accepted doctrines of Obstetrics. But beside and above his professional achievements, he has left behind him the unblemished record of a manly, upright, honourable character. In the words of the late Dr John Brown in describing him:—

"I know him as a man of genuine capacity and worth, strong-brained, right-minded, true-hearted, with that deep abiding sense of the sacredness of truth in everything—in observation, inference, and statement, not less than in word and deed—in science not less than in life, without which genius, learning, and eloquence, be they ever so great, must be mischievous."

The nobility of Duncan's character was never more marked than in the last weeks of his life. He felt that, owing to his impaired health, his work in this world was coming to an end, and that his duties as a teacher and hospital physician had drawn to a close; whilst even if he lived, the extent of private practice would have to be much curtailed. But never a murmur escaped him. He was most considerate to the members of his family and those friends who were about him, and thought much more of their wishes than of his own. He had no fear of death, for he had lived so as to be always prepared for it.

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#### THE LATE DR JAMES LAING.

By the death of Dr James Laing, of Bridge of Earn, Strathearn has lost the old doctor whose name for nearly fifty years has been a household word in the lower part of that lovely valley. It is difficult for us older ones to believe that Dr Laing was only 70 years of age when he died on September 1st, for he has been for so many years the type of the wise old country doctor who has cared for generations of his neighbours.

James Laing began his education in the good old way by serving an apprenticeship to his uncle, Dr Chalmers of Bridge of Earn,

and after studying in Edinburgh, took the L.R.C.S. in 1839, and in 1850 he obtained the M.D. Aberdeen.

He commenced practice in 1840, acting first as assistant, and then successor to his uncle, Dr Chalmers. He was Parochial Medical Officer for the parishes of Dunbarney, Rhynd, Dron, and Forgandenny. In consequence of constant exposure in his long rides and drives, he suffered from two attacks of acute rheumatism shortly after commencing practice; and in middle age he very nearly lost his life from a severe attack of diphtheria, induced by a bite got when attempting to examine the throat of a child who died from that terrible disease. As a sequel to the diphtheria, he had general paralysis of the limbs, which laid him aside for many months, but from which he ultimately made a good recovery. In spite of these various illnesses, he was able to manage a very widespread practice, extending over the whole of the lower part of Strathearn.

In the old coaching days, when people were contented with the mineral waters of their own native country, Pitkeathly Wells and Bridge of Earn were favourite health resorts, and many visitors returned year after year to have courses of the waters, and usually put themselves under Dr Laing's treatment. In this way he had many friends and patients all over the country, and in 1868 they presented him with a very handsome testimonial.

For the last fifteen years he has been assisted by his two sons—first by Dr Henry Laing, who is now in practice in Kirkcaldy; and latterly by Dr J. Begbie Laing, who now succeeds him at Bridge of Earn. Failing health has compelled him during these years gradually to withdraw from active practice, but he still visited a few old patients till within a few months of his death, so that he had actually been fifty years in practice.

His remains were followed to their last resting-place in Dunbarney Churchyard on 4th September by a large company of mourners, and his widow and family have the sympathy of the whole community.

He was a most loveable man, full of kindness, shrewdness, and geniality. Devoted to his work, he spared no pains in helping his patients both as a doctor and a friend. He was a most pleasant man to consult with, free from any jealousy or narrowness; well up in his patient's case, and most loyal in adopting and carrying out any suggestion. His successor's name is the monument of a valued friendship.

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#### MR JAMES GREIG.

ALL Edinburgh students and graduates will regret to hear of the death of the good old man who has, for the last twenty-five years, been such a familiar figure in the wards of the Old and New Infirmarys. Born in 1810, Mr Greig had entered on his 81st year a week or two before his death, which occurred after a short illness on Sept. 4, 1890. He died where he deserved to die, carefully tended in the Students' Ward of the Royal Infirmary. For more than forty years Mr Greig had been connected as Deacon and

Treasurer with the Richmond Congregational Chapel, and during that long period he had been more or less engaged in voluntary evangelistic work in Edinburgh and in many of the villages round Edinburgh, such as Gorgie, Blackhall, and Corstorphine. About twenty-six years ago he became a voluntary visitor to the wards of the Old Infirmary, and some time after the Rev. Mr Strachan (who was then senior chaplain) died, Mr Greig twenty-two years ago was appointed Assistant to the late Mr Hamilton, who had succeeded Mr Strachan as senior chaplain. For seventeen years Mr Greig was assistant chaplain, and for the last five, after Mr Hamilton's retirement, he has been senior chaplain. A simple-minded, innocent man, unwearied in his work, the soul of kindness to the patients, he won the respect and esteem of the staff, and was even tolerated with unwonted mildness by the omnipotent and omnipresent house-surgeon. Even a house-surgeon could not help being mollified by the speed and meekness with which the chaplain used to decamp on the appearance of that august functionary. His quaint Scottish dialect added interest to the remarkable form of prayer with which, in good old custom, he led the devotions of the Managers at the Monday Board. He will be much missed, for no one who knew him could have helped liking and respecting the simple old man.

#### PUBLICATIONS RECEIVED.

- A. S. BROWN,—Madeira and the Canary Islands. Sampson Low, Marston, Searle, & Rivington, London, 1890.  
 W. C. CHAFFEY, M.D.,—Lymph Stasis. H. K. Lewis, London, 1890.  
 F. AUGUSTUS COX, M.B. Lond.,—The Care of the Skin in Health and Disease. Alexander & Shepherd, London, 1890.  
 E. DENSMORE, M.D.,—The Natural Food of Man. Pewtress & Co., London, 1890.  
 JOSEPH FARRAR, M.D., etc.,—Baths and Bathing. John Wright & Co., Bristol, 1890.  
 J. K. FOWLER, M.A., M.D.,—A Dictionary of Practical Medicine by various Writers. J. & A. Churchill, London, 1890.  
 FREDERICK JAMES GANT, F.R.C.S.,—The Lord of Humanity. Hatchards, London, 1889.  
 SAMUEL HYDE, L.R.C.P., M.R.C.S., etc.,—The Nurse's Guide to Massage. John Heywood, London, 1890.  
 OSCAR JENNINGS, M.D., etc.,—On the Cure of the Morphia Habit. Baillière, Tindall, & Cox, London, 1890.  
 C. P. MITCHELL,—The Philosophy of Tumour Disease. Williams & Norgate, London, 1890.  
 S. PARTIDGE, M.D.,—Practical Ambulance Tablets. J. & A. Churchill, Lond., 1890.  
 Prof. S. Pozzi,—Traité de Gynécologie clinique et Opératoire. G. Masson, Paris, 1890.  
 A. RANSOME, M.D., etc.,—The Causes and Prevention of Phthisis. Smith, Elder, & Co., London, 1890.  
 CHARLES E. SAJOUS, M.D., etc.,—Annual of the Universal Medical Sciences, 5 Vols. F. A. Davis, Philadelphia, 1890.  
 O. STURGES, M.D., etc., and S. COUPLAND, M.D., etc.,—The Natural History and Relations of Pneumonia, its Causes, Forms, and Treatment. Smith, Elder, & Co., London, 1890.  
 C. W. SUCKLING, M.D.,—On the Treatment of Diseases of the Nervous System. H. K. Lewis, London, 1890.  
 E. SYMES THOMPSON, M.D., F.R.C.P.,—Influenza, or Epidemic Catarrhal Fever. Percival & Co., London, 1890.  
 Transactions of the American Pediatric Society, Vol. 1. J. B. Lippincott Coy., 1890.  
 Transactions of the Obstetrical Society of London, Vol. 32, Part 2.  
 Dr F. W. WARFVINGE,—Årsberättelse från Sabbatsbergs Sjukhus i Stockholm för 1889. Isaac Marcus' Boktr.-Aktiebolag, 1890.  
 W. S. WATSON, F.R.C.S.E.,—Diseases of Nose and its Accessory Cavities. H. K. Lewis, London, 1890.

#### PERIODICALS RECEIVED.

- Abstract and Index,—May-July.  
 Albany Medical Annals,—Jan.-Aug.  
 Alienist and Neurologist,—Jan.-July.  
 American Journal of Obstetrics,—Feb.-Aug.  
 American Journal of the Medical Sciences, Feb.-Sept.  
 American Lancet,—Feb.-Aug.  
 American Practitioner and News,—Jan.-Aug.  
 Annales d'Oculistique,—Jan.-Aug.  
 Annales de Dermatologie, etc.,—Feb.-July.  
 Annales de Gynécologie et d'Obstétrique,—Feb.



- Annales de la Polyclinique de Paris,—July, Sept.  
 Annales des Maladies des Organes Génito-urinaires,—Feb.-Sept.  
 Annales des Maladies de l'Oreille, etc.,—Feb.-Sept.  
 Annales de Thérapeutique Medico-Chirurgicales.—Feb.-Aug.  
 Archives de Tocologie,—Jan.-Aug.  
 Archives Générales de Médecine,—Feb.-Sept.  
 Archives of Gynæcology,—Jan.-Aug.  
 Archives of Pediatrics,—Feb.-Sept.  
 Archives of Surgery,—April, July.  
 Asclepiad,—March-August.  
 Australasian Medical Gazette,—Dec.-July.  
 Australian Medical Journal,—Jan.-June.  
 Berliner Klin. Wochenschrift,—Feb. 3-Sept. 15.  
 Birmingham Medical Review,—Feb.-Sept.  
 Births, Deaths, and Marriages, Monthly Return of,—Jan.-Aug.  
 Do., Quarterly Return of.—Dec.-Aug.  
 Boston Medical and Surgical Journal,—Jan. 23-Aug. 28.  
 Bristol Medico-Chirurgical Journal,—March-July.  
 British Gynæcological Journal,—Feb. Aug.  
 British Medical Journal,—Jan. 29-Sept. 26.  
 British Journal of Dermatology,—Feb.-Sept.  
 Brooklyn Medical Journal,—Feb.-July.  
 Bulletin de la Société Française de Dermatologie et de Syphiligraphie,—June.  
 Bulletins et Mémoires de la Société Obstétricale et Gynécologique de Paris,—Jan.-July.  
 Bulletin Général de Thérapeutique,—Jan. 30-Sept. 30.  
 Calcutta Medical Record,—Feb.  
 Canadian Practitioner,—Jan. 1.  
 Centralblatt für Gynäkologie,—Feb. 1-Sept. 13.  
 Centralblatt für Chirurgie,—Feb. 1-Sept. 13.  
 Centralblatt für Bacteriologie und Parasitenkunde,—Band vii. Nos. 6-26, Band viii. Nos. 1-12.  
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 Dietetic Gazette,—May-Aug.  
 Dublin Journal of Medical Science,—Feb.-Sept.  
 Ephemeris of Materia Medica, etc.,—April.  
 France Médicale,—Jan. 31-Sept. 12.  
 Gazette des Hôpitaux,—Jan. 30-Sept. 16.  
 Gazette Hebdomadaire des Sciences Médicales de Bordeaux,—June 1-July 27.  
 Gazette Médicale de Paris.—Feb. 1-Sept. 13.  
 Gazzetta Medica di Torino,—Jan. 5-July 15.  
 Glasgow Medical Journal,—Feb.-Sept.  
 Hospital-Gazette of Botkine,—Nos. 1, 2.  
 Index Medicus,—Jan.-July.  
 Indian Medical Gazette,—Dec.-Aug.  
 International Journal of Surgery,—May.  
 Jahrbuch für Kinderheilkunde,—Bd. 30, Heft. 4, Bd. 31, Heft. 1-3.  
 Journal de Médecine de Paris,—Feb. 2-Sept. 14.  
 Journal of Anatomy and Physiology,—Jan.-July.  
 Journal of Cutaneous and Genito-Urinary Diseases,—Feb.-Sept.  
 Journal of Laryngology and Rhinology,—Feb.-Sept.  
 Journal of Mental Science,—April, July.  
 Journal of Nervous and Mental Disease,—Jan.-Sept.  
 Journal of the American Medical Association,—Jan. 18-Aug. 30.  
 Journal of the Respiratory Organs,—April.  
 Journal of the British Dental Association,—Feb.-Sept.  
 Klinische Monatsblätter für Augenheilkunde,—Feb.-Aug.  
 Lippincott's Monthly Magazine,—March-June.  
 Liverpool Medico-Chirurgical Journal,—Jan., July.  
 London Medical Record,—Jan.-June.  
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 Medical Chronicle,—Feb.-Sept.  
 Medical Press and Circular,—Jan. 29-Sept. 17.  
 Montreal Medical Journal,—Jan.-Aug.  
 Morningside Mirror,—Jan.-June.  
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## Part First.

### ORIGINAL COMMUNICATIONS.

#### I.—CROUPOUS PNEUMONIA IN CHILDREN.

By JOHN PLAYFAIR, M.B., F.R.C.P. Ed.

*(Read before the Medico-Chirurgical Society of Edinburgh, 2nd July 1890.)*

*(Continued from page 313.)*

CASE 13 is the next with well-marked nervous symptoms. The patient, a boy of 10, was admitted on January 5th, and had been already three days ill. An hour or two after admission his temperature was  $104^{\circ}$ , and it remained so with little intermission, in spite of cold sponging and antipyrin, till the 10th January, the eighth day of the attack, when it rapidly fell. He had noisy delirium, and complained much of headache. The lower lobe of the right lung was affected, and there was also evidence of a dry pleurisy in the same region. The patient had not a neurotic family history, nor did he appear to be of a specially nervous temperament.

In case 20 the nervous system was specially implicated. It was also interesting as being to all appearance a clear case of septic pneumonia. The patient, a boy of 8, lived in a dark, damp, badly-ventilated room, which was close to a w.-c. The window of the w.-c. opened within a few feet of the window of the room in which patient lived. His illness began suddenly with pain in the belly, vomiting, and headache. Eighteen hours after, he was admitted to Hospital, and was then in high delirium, shouting out loudly. He occasionally tossed the bed-clothes off him, or kept picking at them. He had stiffness of neck and back. His temperature was  $105^{\circ}$ , pulse 110, and respirations 50. The fever ran high, reaching on the fifth day  $106^{\circ}$ . The wet pack was then resorted to, and reduced the temperature two degrees. Previous to that antipyrin and cold sponging had had little effect. On the seventh day, after 5 grains of antipyrin, the fever fell to  $97^{\circ}$ , but immediately rose again, and did not finally fall till the ninth day. The delirium lasted for the first four or five days of the illness. The upper lobe of his right lung was affected, and there was slight catarrh of the left apex for a day or two, which, however, did not go on to consolidation. Patient made a good recovery.

Case 21 was the only other in which head symptoms were pro-

minent. The patient was a boy of 6, admitted on December 16th, 1888, with a history of having been ill for two days. His illness began suddenly while he was at school, with vomiting and severe headache. For two days he continued to vomit everything he took; was thirsty, feverish, and drowsy.

On admission he appeared very ill. His face had a slightly cyanotic hue, and he did not seem to notice anything going on around him. He maintained this dull, apathetic condition throughout his illness, and his delirium assumed a low muttering form. He had well-marked herpes labialis. His temperature, which was  $101^{\circ}\cdot4$  on admission, two days after had reached  $104^{\circ}$ , and two days later went up to  $105^{\circ}$ . Four grains of antipyrin brought it down in four hours to  $98^{\circ}\cdot8$ ; but it soon began to rise again, and it remained between  $102^{\circ}$  and  $104^{\circ}$  till he died on the 21st, the seventh day of his illness.

He had a double pneumonia, both lungs showing signs of consolidation at their bases on admission, the left more than the right. Gradually the whole left lung became involved, while on the right side the disease remained confined to the base. This was probably a case of septic pneumonia from the commencement, the fatal issue being hastened, if not caused, by farther septic infection from a gangrenous mass in the left lung; but of this more hereafter.

No satisfactory explanation of the occurrence of the nervous symptoms in these cases can be offered. The amount of fever was perhaps an important factor in the production of the nervous phenomena. In the five most marked cases the fever ran very high, in one reaching  $107^{\circ}$ , and  $105^{\circ}$  being about the average temperature in the others from the time of admission till the crisis was reached. In the other less-marked nervous cases the fever kept about  $103^{\circ}$  to  $104^{\circ}$  during the febrile period. Heredity, perhaps, plays an important part in the causation of the nervous symptoms in these cases, as it probably does in all morbid conditions of the nervous system. There can, I think, be little doubt but that high fever, acting upon an inherited sensitive nervous system in a child, will almost certainly produce more or less well-marked disturbance of the cerebral and spinal systems. At the same time, it is to me rather a matter of surprise that in children generally in an acute febrile disease like croupous pneumonia we do not get more frequent and far greater disturbance of the nervous system.

Passing now to pleurisy as a complication of these cases, we find that it occurred in six of them, but in only one did it seem of much importance, namely, in No. 11. This case showed the marvellous manner in which a child will sometimes pull through the most hopeless-looking illness. A poor, weakly-looking creature, aged 2; he was admitted on July 6th, 1887, with a temperature of  $104^{\circ}\cdot4$ , a pulse of 144, and breathing 60 to the minute. He had signs of consolidation over the upper lobe of his right lung, and

some bronchial catarrh of both lungs. By next day the whole lung had become consolidated and friction was heard at the base. On the 13th the temperature fell, and the little fellow was thought to be on the fair way out of his troubles. The lung physical signs did not improve, however, and the temperature did not keep normal. By the 24th signs of fluid in the right chest became so pronounced that a hypodermic needle was introduced a little below the inferior angle of scapula and pus found. Next day his chest was aspirated, and 4 oz. of pus drawn off. He was so collapsed after the operation that hope of his recovery was almost abandoned. Under free stimulation and by constant attention to his nourishment he rallied, and went on fairly well for some days. He had, however, always an evening rise of temperature, and as there were still signs of fluid in his right chest, he was aspirated again on August 9th, and about 10 oz. of thick pus withdrawn. On the 14th another aspiration was performed, with a like result, and on the 22nd his chest was opened and drained, and about 8 oz. of pus evacuated. Large quantities of pus continued to come away for a day or two, but the discharge gradually lessened, and after the 30th of August the drainage-tube was not re-inserted, and in a few days more the chest opening had completely closed. The pus kept sweet throughout. By the 28th September the report is:—"Slight relative dulness at right base. Breath sounds normal."

This case shows the wonderful vitality possessed by some children, and often by those in whom a reserve of strength is least expected. He passed safely through a more than usually sharp attack of pneumonia, complicated by a purulent pleurisy and all the necessary operative interference connected with it. At the end of about three months from the commencement of his illness scarcely an abnormal sign could be detected in his chest.

It may be asked why I delayed so long in opening his chest. His collapse and weakness were so profound after the first aspiration that I could not possibly convince myself that he could stand the more severe operation of incision. It was only after his strength had visibly increased under the repeated aspirations, or rather through the time gained by the aspirations, that I could bring myself to feel that he had a fair chance of surviving the greater operation.

The other cases of pleurisy complication do not require much comment, as in them it seemed to have little or no effect on the course of the pneumonia. Case 19 illustrates this well. The patient, a boy of 5, had a decided phthisical family history, and in addition to his pneumonia of lower lobe of left lung, with a pleurisy in the same region, he had a pronounced cardiac affection (mitral incompetency). Immediately preceding his pneumonic attack, also, he apparently had a rheumatic affection of about three weeks' duration. Yet in spite of all this, his pneumonia was of an



ordinary five-day type, his temperature never was above  $103^{\circ}$ , and he left the Hospital three weeks after admission with no abnormal lung signs whatever.

Case 27 was probably recovering from an unnoticed pleurisy when the pneumonic attack occurred. On admission there was flattening and lessening in size of the affected side, and curvature of the spine. The extreme right apex was consolidated. The temperature ran high ( $104^{\circ}$ ), but fell on the sixth day, and the child made a perfect recovery. The fresh inflammatory action apparently benefited the old pleurisy, as the chest formation was greatly improved when she left the Hospital, and the right lung expanded freely.

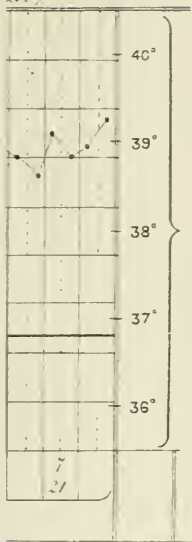
Another somewhat frequent complication of croupous pneumonia is bronchitis. This is not so well recognised as it ought to be, partly, I think, because it is so generally associated with the other variety of pneumonia—the catarrhal. There can be no doubt, however, that cases of croupous pneumonia in children are occasionally met with in which bronchitis exists in the opposite lung, and sometimes, though much more rarely, in the same lung. Hensch states this very clearly and gives some examples. The bronchitis may even run on to a pneumonia, so that you may actually have both kinds of pneumonia in the same patient at the same time, and either in the same or different lungs. In such cases it is extremely difficult to diagnose which kind of pneumonia you have to deal with. The only reliable guide is the temperature chart. A well-marked crisis at the fifth or eighth day will indicate the croupous form as predominating; while a prolonged irregular temperature will denote the catarrhal variety.

Five of the cases related—namely, cases 11, 14, 20, 23, and 29—had at least bronchitis, if not broncho-pneumonia, as a complication, and in all of them I find the fever ran high, and the crisis was delayed usually till the seventh or ninth day. They all had a distinct crisis, however, and from their mode of onset, also, and other symptoms, there was little or no doubt but that they were really cases of croupous pneumonia.

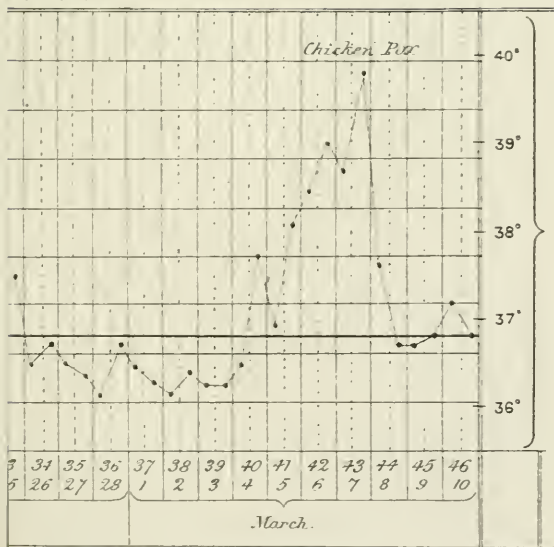
Gastric and intestinal irritation often precede or accompany an attack of croupous pneumonia in children. High fever in itself no doubt produces digestive disturbance both in adults and children, but vomiting and diarrhoea occur so early in many of these cases that it must be independent of the fever and due to some other cause. I find that vomiting or diarrhoea, or both, were prominent symptoms in nine of the thirty cases before us, and they probably occurred in others, but were not noted. In several of the nine cases the record is—"Illness began suddenly, with vomiting and purging." In one or two of the cases severe abdominal pain was also present, so that the symptoms at the beginning were more those of peritonitis than of pneumonia.

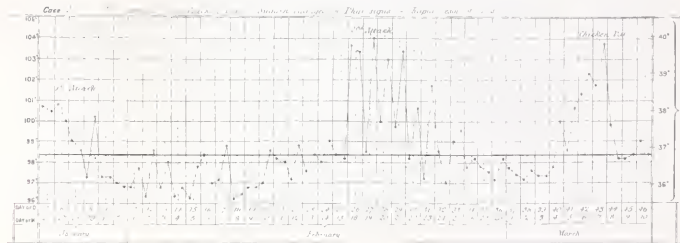
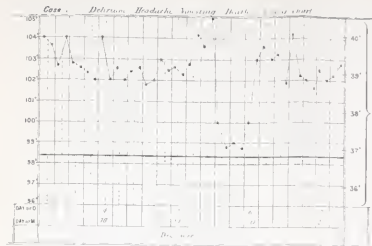
This was particularly the state of matters in case 18. A boy

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of 3, he was admitted on 21st July 1888, with a temperature of  $104^{\circ}$ , a pulse of 160, and respirations 52 per minute. Three days before, he had rather suddenly become very drowsy, complained of pain in his head and belly, and vomited several times. After some hours the vomiting ceased, but pain in the belly continued and became worse. On admission, his abdomen was somewhat distended and tender all over. He lay on his back with his legs drawn up. No abnormal chest physical signs could be detected. He remained much in the same state till the 25th, four days after admission, when his left lung was found dull from spine of scapula to base, with tubular breathing over dull area and fine crepitation at end of inspiration.

This, I believe, was one of those pneumonias in which the physical signs were latent or long in developing, and masked by abdominal symptoms. The chart was not typical of pneumonia, the fall of temperature being more gradual than usual, and fever being well down before the pneumonic physical signs had developed.

An examination of the notes and charts of those nine cases, which manifested marked gastric and intestinal irritation, shows that they were all severe, one or two of them, indeed, dangerously so. The crisis in all of them was delayed. In some of them it took place on the ninth or thirteenth, and in one, case 10, it was the nineteenth day before the temperature reached the normal.

As is well known, if the diarrhoea is prolonged, it becomes extremely difficult to diagnose between croupous pneumonia and typhoid fever. This is illustrated by case 3, a girl of 9, who was admitted to the fever wards of the Hospital on 19th May 1885, as suffering from typhoid fever. Three days later dulness and other signs of pneumonia developed at her right apex, and the true nature of the case becoming evident, she was removed to the general ward.

Having now mentioned a few of the complications, allow me farther to notice some of the peculiarities of croupous pneumonia in children.

The first I would mention is one I have already alluded to as illustrated in case 18, namely, the frequent latency or late development of the physical signs. It is not an uncommon occurrence to have a child suddenly taken ill with high fever, cough, *alæ nasi* acting, a pneumonic pulse-respiration ratio, and, indeed, with all the general signs of croupous pneumonia, but the most careful examination of the chest quite failing to detect any of the physical signs of a lung affection. Or at least the physical signs will be limited to a faint click at the end of inspiration, or somewhat rough breathing over a portion of one of the lungs. This state of matters may continue for three or four days before anything more definite is manifested in the chest.

Case 5, the girl who was admitted on 11th June 1885 for chorea, and who was attacked with pneumonia eleven days after



admission, was a good example of this late development of the physical signs. On that day, 22nd June, her temperature suddenly rose from normal to  $102^{\circ}6$ , and pulse and respirations assumed the pneumonic ratio. Her chest was carefully and repeatedly examined; but it was not until the 25th June, three days later, that a shade of dulness was detected at the right apex anteriorly, with an occasional click at the end of inspiration in the same region. These remained the only physical signs till the 27th June, two days later, when the note over the right apex became decidedly dull, and the breathing there markedly tubular.

Case 18 was also an example of this late development of physical signs, as already incidentally pointed out. He was admitted on the 21st of July, but it was not till four days later that his left lung, on examination, gave physical signs of condensation.

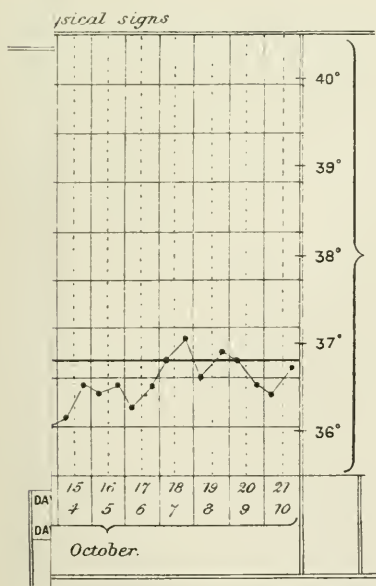
Case 15 also illustrated this point. Admitted on 7th May 1888, with a temperature of  $104^{\circ}$ , respirations 48, and pulse 152, and a troublesome hacking cough, he had no chest physical signs beyond a few moist sounds over both lungs. His illness appears to have been thought rheumatic, as he was treated with salol for the first two days. On 10th May, three days after admission, distinct dulness over the lower half of his right lung was found, with confirmatory auscultatory signs of consolidation. His temperature suddenly fell to sub-normal on the fifth day of his illness, and he passed through a typical attack of croupous pneumonia.

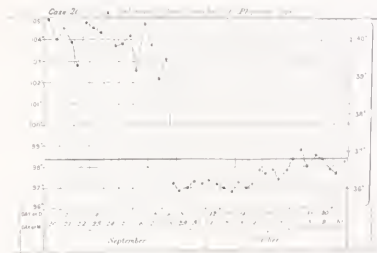
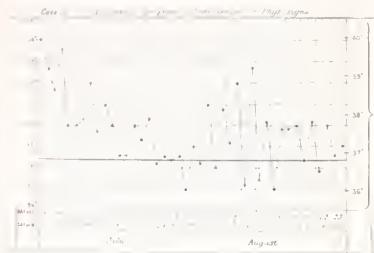
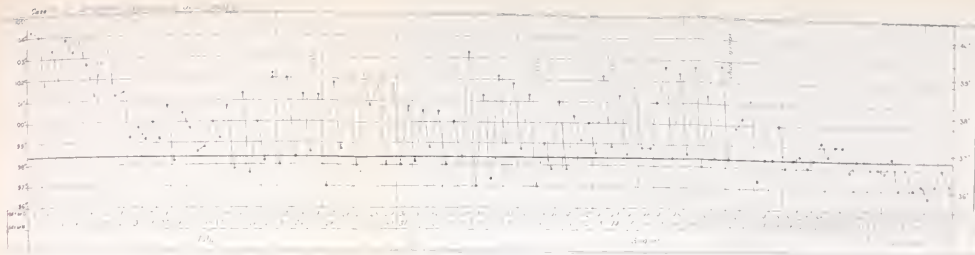
Case 20, which has already been mentioned in illustration of some of the nervous phenomena of pneumonia, also did not show physical chest signs till the fourth day of the illness.

Case 26 ran a typical pneumonic course as regards general symptoms, but the physical signs were very limited and late in developing. A girl of 13, she was admitted on the 13th of February 1889, with a temperature of  $101^{\circ}$ , and quickened pulse and respirations, and a history of having been ill for three days. Her chest was carefully examined, and no abnormal signs whatever could be detected. Next day some fine distant crepitation was heard over a small area just below the spine of the right scapula. The day after, a small area of dulness, about 2 inches square, was made out in the same region. No other chest physical signs could be discovered during the whole course of the case, but the temperature fell to  $97^{\circ}$  on the eighth day of the illness, and all the general symptoms were those of a well-marked example of croupous pneumonia.

Eustace Smith points out this delay in the establishment of the physical signs. He says,—“Often two or three days elapse before any characteristic changes are to be discovered by the finger or the ear.”<sup>1</sup> Henoch, in speaking of the difficulties of diagnosis between croupous pneumonia in children and typhoid fever and meningitis, says, “The latency of the physical signs may last from

<sup>1</sup> *Practical Treatise on Diseases of Children*, p. 427.





four to six days,"<sup>1</sup> and attributes the delay to the gradual spread of the pneumonia from the centre of the lung to the periphery, the signs of consolidation only appearing when the inflammation has reached the lung surface. Dr Minot, in his paper on "Croupous Pneumonia" in Keating's *Cyclopædia of the Diseases of Children*, quotes a case in which it was not till the sixth day, when the crisis was almost completed, that signs of consolidation, though they had been carefully and repeatedly sought for, could be detected.

Occasionally, I believe, croupous pneumonia in children escapes notice altogether, or at least is not correctly diagnosed on account of this late development and limited nature of physical signs.

I had in my ward about a month ago a little patient in whom, had it not been for his temperature curve, breathing, and pulse, a croupous pneumonia would probably not have been diagnosed. His chest was carefully examined daily, once, if not twice, and it was not till about the fourth day after his admission that a faint puff of fine crepitation was heard at his right apex posteriorly, and the breathing was noticed as slightly bronchial. Almost simultaneously with this his temperature made a sudden fall, and his chart assumed the typical pneumonic curve. If the temperature had not been graphically noted, and his chest carefully examined day after day, it is more than likely, I think, that his illness would have been named a "febricula," or some equally synonymous term for my ignorance.

Another peculiarity in the croupous pneumonia of children, and one which perhaps also leads to difficulties and doubts of diagnosis, is the extremely rapid manner in which the physical signs, and especially the dulness and other signs of consolidation, disappear.

In noticing this rapid change and disappearance of physical signs, Hensch states that in the majority of cases "clear percussion note and normal breathing return after a week, or at latest after ten or fourteen days," and that he had even seen three cases "in which the physical signs were in process of resolution before the crisis commenced." He also quotes Grisolle and Sidlo in support of his statement, the latter of whom remarks that "37.5 per cent. of the cases came to an end forty-one hours on an average before the onset of the crisis, so far as could be made out by physical examination."<sup>2</sup>

Twenty-seven of the cases under consideration gave an average duration of fifteen days—that is, fifteen days from the onset of the illness till the date on which the chest gave a clear percussion note and normal breathing.

Case 11, the boy whose pneumonia was ultimately complicated by empyema, was an example of the rapid change of physical signs, due to the sudden extension of the pneumonic process. On admis-

<sup>1</sup> *Lectures on Children's Diseases*, vol. i. p. 403 (New Syden. Soc., 1889).

<sup>2</sup> *Ibid.*, p. 411.



sion only the upper lobe gave dulness on percussion and tubular breathing, but by next day the whole lung was consolidated.

Case 15, already mentioned as an example of late development of physical signs, is an excellent illustration of the rapid resolution of the pneumonic consolidation in a child. On 11th May 1888, the report of the state of her chest is as follows:—"Distinct dulness from about middle of scapula to base of right lung, with numerous medium and fine crepitations over this area, and increased vocal resonance." At the left apex there were also signs of consolidation. On 16th May, five days after, the report is:—"Crepitations and other physical signs have practically disappeared. Slight dulness over the right base, with harsh breathing, alone remain."

Case 25 is interesting, not only on account of the sudden changes in the chest physical signs, but also as being a case in which a relapse or second pneumonic attack occurred about eighteen days after the first. A little girl of  $2\frac{1}{2}$ , she was admitted on 26th January 1889, with signs of pneumonia, confined entirely to the base of her right lung. By next day there were signs of the whole lung having become involved. The fever fell to normal on the 28th, but rose to  $100^{\circ}$  next day. The following day it again fell, this time to sub-normal, and did not rise again. On the same day it was noted that dulness and tubular breathing had quite disappeared from the right lung, only some redux crepitation remaining. Patient went on well till the 18th February, when a sudden rise of temperature ( $103^{\circ}6$ ) took place. Next day crepitation, fine and medium, was heard at both bases, but specially marked over right base, where there was also some dulness on percussion. Temperature fell to normal on 24th February, and by the 27th the chest was noted as free from all abnormal signs. Not content with her two attacks of pneumonia, she ended a week or two later by taking chicken-pox.

These sudden changes in the physical signs in the pneumonias of children must be puzzling to any one beginning the study of their diseases, and may even lead to doubts as to correctness of diagnosis. Such changes are of frequent occurrence, and ought to be expected. It is well to bear in mind also that the fine pneumonic crepitation so constant in the adult during the inflammatory stage, is often not heard in the child, probably because its inspirations are too shallow to produce it. So also redux crepitation is often absent in children.

Passing from these peculiarities in the physical signs, another circumstance worth noticing in the Croupous Pneumonias of children is the comparative ease and safety with which they pass through the attack. Notwithstanding bad family history and insanitary home surroundings, the great majority of the cases end in recovery. Even grave complications, such as pleurisy and empyema or heart affection, are successfully battled with and overcome. The records before us furnish examples of severely com-

plicated cases making good recoveries. Some of them have already been mentioned, and sufficiently emphasize the point, without my occupying more of your time selecting and bringing forward others.

Let me now say a word or two regarding the two fatal cases. Case 21, a boy of 6, died on the seventh day of his illness. He was admitted on the 16th December 1888. His illness began two days before with severe vomiting. He soon became drowsy and very feverish. On admission, his temperature was  $101^{\circ}4$ , respirations 42, and pulse 110. Patient looked very ill, and was somewhat cyanosed. Left lung consolidated from spine of scapula downwards; right lung also in its lower fourth. The whole of the left lung ultimately became solid, the pneumonic process extending to the front as well as back. His temperature soon after admission reached  $104^{\circ}$ , and, except for a few hours after four grains of antifebrin, fell little from that point till the time of his death on the 21st. Increasing weakness prevented repetition of the antifebrin, and frequent tepid sponging was resorted to instead to reduce fever. Digitalis, carbonate of ammonia, ether, and alcohol were freely administered, but were of no avail.

At the post-mortem the left lung was found wholly consolidated, and at its base a gangrenous mass with a small cavity in its centre. The bronchi of the lower lobe were filled with firm fibrinous clot. Right lung was found engorged, with collapsed areas, and commencing catarrhal pneumonia, especially in the upper lobe. Lower lobe oedematous. All the cavities of the heart filled with dark coloured clot. Valves normal.

Patient evidently died, therefore, from gangrene of his left lung of the circumscribed variety. Possibly it was embolic in its origin. Bouillard states that blood coagula are apt to form during the pneumonic process, and all the cavities of the heart were certainly found filled with dark-coloured clot. Or the gangrenous condition may have been produced through the obstruction to the circulation by the distended condition of the bronchi, which were found crammed with a fibrinous material.

This condition was not suspected during life. The diagnosis of gangrene of the lung in children is attended with special difficulty, as they seldom or never expectorate, and hence the chief sign of pulmonary gangrene, namely, foetid expectoration, is usually wanting. Except that the child looked very ill and depressed, there was no other symptom pointing to such a grave condition of lung.

Case 30 was the other fatal case. A child of only 18 months, he was a good example of the extraordinary vitality which even some very young children show. He sustained two, if not three attacks of pneumonia, and then took measles. He struggled on for several weeks, but his chest never cleared. Fever persisted, and he wasted and died from exhaustion.

He was admitted on the 22nd November 1889 with a well-

marked attack of pneumonia, affecting the whole of his left lung. His history was that he had been two days ill from his present attack, but that a month previously he had had also an inflammatory chest affection, which was probably pneumonic. His present attack was severe, but he came safely through it, and his chest was reported normal on December 10th. On the 16th December his temperature rose again, and two days later pneumonic signs were detected, and again in the left lung. He seemed as if he were to do well in this attack also, as his temperature fell to subnormal on the 21st. Twenty-four hours later it rose again, however, and the lung consolidation did not clear away. On the 27th a measles rash appeared, and he was removed to the Fever Hospital. He was re-admitted on the 29th January 1890. He was now much emaciated, and had signs of a pleuro-pneumonia on the left side of his chest, with numerous rhonchi and medium crepitation heard all over both lungs. He gradually became weaker, and died on February 7th.

At the post-mortem the left lung was found adherent to the chest wall almost throughout its whole extent, and also to the diaphragm. The lower lobe was collapsed and condensed. Right lung was congested with patches of collapse at its free margins, and some signs of commencing catarrhal pneumonia. Glands at the roots of the lungs enlarged and tubercular. Liver and spleen also tubercular.

The treatment adopted in these cases was mainly expectant, and therefore little need be said of it. Continuous hot moist applications to the chest were not employed. Such applications I believe do harm. They impede the movements of the chest by their weight, tend to increase fever, and generally are anything but comfortable.

All the counter-irritation required was secured by the application, to the back of the chest, of a few hot linseed meal poultices sprinkled over with a little mustard. Each poultice was kept on for about twenty minutes, and in the intervals the chest was enveloped in a light layer of cotton wool. Internally, if the cough was troublesome, an occasional dose, according to age, of a mixture of equal parts of syrup of tolu and syrup of chloral was given. If the patient seemed getting exhausted, and the pulse was becoming rapid and feeble, the chloral and tolu mixture was stopped, and a mixture of carbonate of ammonia, tincture of digitalis, and infusion of senega given instead. This mixture was often required about the time of the crisis or immediately after, as already mentioned. Alcohol was also usually given at this time.

As regards antipyretics, I find tepid sponging is by far the safest and most effective means of bringing down temperature in children. It is easily carried out, and a skilful nurse can sponge the patient as often as necessary without in the least disturbing or exposing him. My rule is to sponge whenever the temperature reaches

103½°, and to do so every two hours till the fever is reduced two degrees. Antipyretics, such as antipyrin and antifebrin, were given in some of the cases also, and usually with good effect. Occasionally, however, the effect was greater than expected, and the consequent exhaustion was more pronounced than desirable. For that reason chiefly I prefer the sponging, unless in a case of hyperpyrexia, as in the cases where the temperature ran up to 106° and 107°, when antipyrin and antifebrin were used and the wet pack also resorted to. I prefer antipyrin to antifebrin as being decidedly less depressing.

During convalescence, iron, maltine, and cod-liver oil were the chief medicinal agents relied upon.

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## II.—A VISIT TO THE REKNAES HOSPITAL FOR LEPERS AT MOLDE, NORWAY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra-Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Consulting Physician, Edinburgh City Hospital.

DELIGHTFULLY situated on the shores of the fjord of the same name, sheltered from the cold north winds by well-wooded hills 1500 feet high, nestling among trees of species which grow hardly anywhere else in Norway, with a milder climate than the majority of places in the same latitude, in front the ever-changing sea, studded with picturesque islands, and beyond this the splendid chain of the Romsdal Alps, stretching from east to west as far as the eye could reach, sending their countless peaks high into an atmosphere as clear and blue as an Italian sky, the little town of Molde, with its population of some 1700, appeared in August of this year (a month sunless and wet in Great Britain) indescribably charming. Yet there is a dark spot even in Molde,—a leper hospital capable of holding 160 patients, an indication that this loathsome and well-nigh hopeless disease, though steadily diminishing in the number of its victims, must still be regarded as endemic. And, indeed, a map prepared some years ago by Dr Kaurin, the distinguished physician of the Hospital, showing the distribution of lepers throughout Norway, plainly exhibited the fact that two spots present the greatest assemblage in the smallest area, the neighbourhoods respectively of Molde and of Bergen, though the reduction has been going on in recent times here as elsewhere.

At the west end of the town, in well-wooded grounds which slope gently up from the road running parallel to the fjord, and commanding an extensive view, is placed the Leper Hospital for the district of Reknaes, including Molde and Romsdal. It was originally founded in the year 1713, and was principally maintained from the revenues of lands which had been given or bequeathed to it. In 1861 it was replaced by the present and much larger one, built



at the expense of the State. It is a two-storied building of wood, consisting of a central block with five wings, one of which is a neat and airy chapel, where service is held once a fortnight. The lepers are treated gratuitously, the expense being defrayed mainly by the State, but partially from the revenues of the old hospital.

The wards are spacious and well-ventilated, the male cases are placed in one wing, the female in the other, while the executive department is disposed in the central part. The education of the younger lepers is not neglected, for there is a school with all necessary appliances for teaching. The older inmates are occupied in spinning and in knitting the Norwegian wool. There was no over-crowding of the wards, and the national cleanliness was not less evident here than elsewhere. The number in hospital at the date of our visit was 79. In 1856 the total number of lepers in Norway was estimated at 2900, and since then this has steadily diminished, so that now it is calculated that they probably do not exceed 1000. The number in hospital, too, has varied to a considerable degree. In 1856 there were but 200, but in 1866 this had risen to 800, the highest it has attained. With the decline of the complaint throughout the country, the number in hospital has also lessened, so that now there are only about 500 availing themselves of the advantages of treatment and residence there. Removal into hospital benefits the patients themselves; they are there kept clean, their ulcers are carefully dressed, useless limbs or such parts as are the source of pain or distress are amputated, and thus their lives are prolonged and made more endurable. It at the same time is advantageous to the general population, by reducing the number of foci from which the disease may make fresh inroads, or attack new victims. Hence isolation has distinct merits of its own. Yet the decrease in leprosy in Norway cannot wholly be ascribed to isolation. In Iceland leprosy was at one time extremely widespread; there are now only about ten in the whole island, though isolation has never been carried out, nor has the condition of the people materially, if at all, improved. The influence of heredity *per se* is equally difficult to fathom. In the case of children their mode of life is essentially the same as that of their parents, while they are in more or less intimate and prolonged contact with them, still not all the offspring suffer even in instances where both parents are affected.

Dr Kaurin is a full believer in the communicability of leprosy. There are, however, some curious points with respect to this. In Norway no nurse nor any medical man in attendance on lepers has, so far as is known, ever yet contracted the disease, nor have any experimental inoculations on animals been successful. Physicians have inoculated themselves, their colleagues, and numerous healthy persons, introducing the leprosy material in the form of portions of the nodules under the skin, but no one so treated has yet become a leper. To communicate the disease two factors would appear

necessary,—one, prolonged or very intimate contact with a leper, as by sleeping in the same bed, wearing the clothes of an affected person, etc.; the other, a peculiar condition of the system, probably induced by habitually partaking of a bad or at least unsuitable dietary. Mr Jonathan Hutchinson, as is well known, holds strongly that “fish is probably the vehicle by which the poison of leprosy gains access to the human body.”<sup>1</sup> Medical men have not yet generally adopted his view, but from several conversations which I held with intelligent Norwegian peasants as to their opinion of the cause of leprosy, it seemed evident to me that they were inclined to think that fish had at least something to do with its origin or spread. If such a view is, even to a limited extent, correct, there can be no true ground for any leprosy scare as far as this country is concerned. There is no reason to fear that, under existing conditions, leprosy will again obtain a hold in Great Britain. A physician who holds strongly the view that leprosy is non-communicable once visited a Norwegian leper hospital, and there ventilated his opinions freely and decidedly. “Will you then occupy a bed alongside one of these patients?” asked the doctor in attendance. “No,” replied the anticontagionist, thus put to the proof after a fashion he did not anticipate, “I have a wife and children at home depending on me.” He had not, and perhaps one could scarcely expect him to have, the courage of his opinions.

Ever since the discovery of the bacilli peculiar to leprosy by Hansen in 1874, a deep and increasing interest has been manifested in these micro-organisms. Dr Kaurin has a thoroughly equipped laboratory in the Hospital, in which he has carried on important investigations into the bacteriology of leprosy. He has recognised the resemblance which the bacilli bear to those of tubercle, though smaller and heaped up into groups instead of being scattered. He thinks, also, that they are contained within the cells, not outside them, as Unna has stated.<sup>2</sup> Dr Kaurin has found the bacilli in the spinal cord, and occasionally in the cerebrum, but it is rare for them to be met with in the central nervous system. He has examined the earth, water, and food with negative results; and on one of the days on which I visited the Hospital, I found him setting up an apparatus which he had just received for examining the air. When the difficulties which surround the subject are kept in mind, the wonder is that the bacilli should ever be discovered in these media unless by a fortunate accident; the traditional needle in a haystack is, compared with this, a comparatively simple matter. He has not succeeded in cultivating the bacillus, and has come to the opinion that perhaps there is some intermediate stage through which it passes, or some undiscovered host in whom it undergoes a

<sup>1</sup> *Archives of Surgery*, vol. i., Appendix, “The Leprosy Problem,” p. 11, 1889.

<sup>2</sup> “Wo liegen die Leprabacillen?” *Deutschen Med. Wochenschrift*, No. 8, 1886.

further development not yet unearthed. I observe that Dr Beaven Rake has enunciated a similar theory.<sup>1</sup>

The incubation period of leprosy is almost certainly a long one. Dr Kaurin stated it as probably from three to four years. He has never seen a case in very young children, in cases even where the parents were lepers. The disease sometimes manifests itself as early as at the age of 5, more commonly between 15 and 20, but it may declare itself at any age. Thus he showed me a patient 70 years old, affected with the non-tubercular or anæsthetic form, who had suffered from the symptoms for only two years. The maculæ were well-marked on the flanks—the centres, as usual, after a time being anæsthetic, the peripheral portions hyper-æsthetic, while on the lower dorsal region were leucodermic spots, which had resulted from the absorption of previous maculæ. The duration varies, in some instances as much as forty years; more usually they succumb to it in from nine to fourteen years. A frequent termination is phthisis; and, indeed, the resemblance between phthisis and leprosy has been pointed out by more than one observer. The precise diagnosis of leprosy, even in a country where it is prevalent, is not by any means so easy as would at first sight appear. An old woman was in hospital for observation. She had on the limbs and neck large brownish-red erythematous blotches, each irregularly rounded, and presenting considerable resemblance to a macular syphilide. Yet in this case syphilis could, Dr Kaurin assured me, be absolutely excluded. This condition had lasted one year. There was no anæsthesia, or if any, the merest trace in the centre of some of the patches. A small portion of skin removed from above the eyebrow, so frequently one of the earliest situations for leprosy to manifest itself, was found not to contain bacilli. The disease in this instance was probably a chronic erythema multiforme.

The tubercular form is by far the more common, yet in hospital the number of anæsthetic cases nearly balanced the tubercular. When the mixed form is met with, the tubercular usually precedes the anæsthetic in point of time, but this is occasionally reversed. The tubercular exhibits the greatest variety in the appearances. The colour of the tubercles as seen fluctuated between a pinkish hue and a brownish-red tint. Sometimes much, at other times little, pigmentation followed the absorption of the nodules. Ulceration and caries in place of atrophy succeed. The cartilages of the nose are destroyed, and an aspect not at all unlike that which may be occasioned by tertiary syphilis is assumed, or the skin becomes tightly bound down over the facial bones, acquires a bluish-leadén hue, and the general effect is extremely ghastly. The cornea is specially apt to become the seat of tubercles, sight is usually lost, and the optic nerve may be involved secondarily. Sometimes a mere stump remained, in other cases the corneal ulcer healed, and

<sup>1</sup> *Report on Leprosy and the Trinidad Leper Asylum for 1889*, p. 7. Port-of-Spain, 1890.

the eyeball, shrunken and sightless, was still in place. Tubercles do not readily form on the scalp, hence the hair there continues, but the eyebrows in both sexes and the beard in men either wholly or in great part fall off. Febrile accessions are common, due in some cases to the eruption of fresh tubercles, in others to the invasion of phthisis. There are occasional complications; thus in one woman I noticed acne rosacea in conjunction with leprous tubercles on the face. Caries of the bones of the feet may occur. Dr Kaurin showed me some most interesting specimens in his museum; one was a foot in which only the os calcis and the atrophied remains of some of the phalanges were distinguishable. Leontiasis was well-marked in some; in others, also examples of tubercular leprosy, it was scarcely discernible. Though present to a slight extent, in no case was leucoderma at all a marked feature, and "the leper white as snow" was not recognisable.

The non-tubercular or anæsthetic type is perhaps the more interesting of the two. In some cases maculæ, which are at first hyper-, and later an-æsthetic, are the earliest symptoms; in others the anæsthesia seems to be the first thing to attract notice. It is a well-marked phenomenon, so that amputation can be performed on parts where it is pronounced without chloroform. A noticeable feature is the atrophy of the thenar and hypothenar muscles, the contraction of the flexor tendons of the fingers, and a gradual digital osseous wasting. This latter begins in the distal phalanges, which become thinner and thinner till they disappear. Then the second phalanges are affected, and undergo a similar destructive change. Sometimes the pulp of the finger remains with the nail attached on the shortened digit; at other times the finger looks as if amputation had been skilfully performed, and a well-shaped stump results. Severe neuralgia, usually of the sciatic, is common, only to be relieved by the removal of the limb. The tendon reflexes are abolished when the anæsthesia is fully established. Perforating ulcer of the foot not unfrequently occurs; this is also seen in locomotor ataxy, and the neuralgia in leprosy may also be contrasted with the lightening pains of tabes. Ectropion also occurs, but its disastrous effects on the eye can be much lessened by blepharoraphy. Dr Kaurin frequently performs this; he makes the edges of the eyelids raw on their inner third, then stitches them together; the puncta lachrymalia are in this way obliterated, but no stillicidium follows.

The treatment of leprosy in the Reknaes Hospital consists mainly in relieving symptoms. Dr Kaurin has tried ichthyol, but without definite result; and the same may be said with regard to chaulmooghra oil. Patients as a rule are too late of coming in for treatment. That much might be done were cases received earlier was proved by the improvement in two instances which had offered themselves soon after the commencement of the complaint. One of these was a woman, aged 19, admitted four years previously.



She had then suffered for one year from the anæsthetic form, with many maculæ on her shoulders. Under good diet, baths, and a generally well-directed hygiene, all these had disappeared. She looked cheerful and plump, with a mere trace of anæsthesia persisting on the hands. The other was a boy, aged 14, who had had the tubercular form for five years. He, too, had now no tubercles, their situation being represented by slightly puckered scars. Both were in a fair way towards complete cure. Melancholy as was undoubtedly the state of many of the patients, one could not help mentally contrasting their condition with that of those who could not have the advantages of skilful management in hospital.

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### III.—ON PLACENTA PRÆVIA :

BEING THE OPENING REMARKS TO A DISCUSSION ON THAT SUBJECT.

By D. BERRY HART, M.D., F.R.C.P.E., President Edinburgh Obstetrical Society ; Physician, Royal Maternity and Simpson Memorial Hospital, etc.

*(Read before the Edinburgh Obstetrical Society, 11th June 1890.)*

I HAVE no intention at present of going fully into the question of the Pathology and Treatment of Placenta Prævia. It is hoped that we may have an expression of opinion on this subject from many of our Fellows, and it would defeat the primary object of the discussion were I to occupy an undue amount of our time in a prolonged introduction. My object will rather be to state what I believe to be the modern standpoint in this important question, giving the most recent advances in pathology, as well as indicating the safest and most rational treatment, so far as this can be done in the varying cases one meets in actual practice.

In regard to the pathology of this condition, I have no doubt that the increase of accuracy in our knowledge as to the lower uterine segment and the publication of the sections of Winter, Hofmeier, and Kaltenbach, have been of the greatest service in making matters plain. While we owe much of this knowledge to Germany, it should be noted that as early as 1863 Dr A. S. Donkin of Newcastle-on-Tyne enunciated the doctrine very clearly, and pointed out that a short zone of the body of the uterus adjoining and close to the cervix behaved passively during labour ; and that Farre and Matthews Duncan contributed materially to our knowledge many years ago. In treatment, too, as we shall see, we are also indebted to a distinguished member of the London School, Dr Braxton Hicks.

We are now able to divide the full time uterus into three parts, viz., cervix, lower uterine segment, and a retracting or active portion above the latter. The second is usually  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches long, and is characterized not only by its lamellar structure,

but also by a loose attachment of the peritoneum. This looseness is very apparent in front in labour and puerperal sections, where it is shown in a way one might almost characterize as diagrammatic. It is best demonstrated by thin celloidin sections. We have, therefore, now a great precision of definition in regard to the position of the placenta, a precision much needed in English and foreign text-books. *The placenta is normally placed only when it lies above the level of the lower uterine segment: placenta prævia is the condition where part of the placenta dips into the lower uterine segment: while the so-called accidental hæmorrhage is hæmorrhage from separation of the placenta, when it is in its normal position, i.e., attached to the uterine wall above the level of the lower uterine segment.* No accuracy in our knowledge could be had so long as it was believed that the prævial portion of the placenta lay in a zone which did not differ from the uterus above it, i.e., retracted actively during the pains.

Our knowledge of the etiology of placenta prævia is confessedly imperfect, and what we do know as yet is rather in the way of association, and not necessarily causal. One interesting point has recently been brought out by Hofmeier and Kaltenbach, viz., the relations of the decidua reflexa to placenta prævia. In regard to the decidua reflexa we do not know as much of its development as we would like, although interesting results are being got in its comparative development. Even in the earliest human pregnancies examined, it seems to have grown round and shut off the ovum, and apparently limited the ultimate excessive development of the chorionic villi to the placental site, i.e., it appears normally to prevent the formation of a diffuse placenta. Now in placenta prævia, where we have the placenta overlapping the os internum, Hofmeier believes that the placenta has in part developed over the reflexa: were it not so we should in such a case get only chorionic villi over the os internum. In his specimen, which was that of a four months' twin pregnancy, this development can be distinctly seen, and the decidua reflexa with placenta developed on it is separate from the decidua vera for about half its length. Kaltenbach has confirmed this in another specimen, and urges that we may define the placenta as prævia when it develops in the lower segment of the reflexa. This seems to me no adequate definition unless it can be shown that the reflexa springs below from the level of the upper boundary of the lower uterine segment. Hofmeier and Kaltenbach discuss several interesting questions on this point, but it is unnecessary at present to consider these. I may urge, however, that in Kaltenbach's preparation and one of Hofmeier's, both at the second month, the placenta is large relatively, and it is quite conceivable that ultimately the growing uterus would carry placenta away from the lower uterine segment, and the placenta thus cease to be prævia.

In regard to the question of blood circulation in the maternal

portion of the placenta and uterine wall, the recent researches of Waldeyer have quite confirmed those of Sir W. Turner. Minot, a recent able writer on the placenta, considers Farre's description to be still one of the best on this head. Hofmeier has also shown that in placenta prævia the normally meagre supply of direct arterial branches to the lower uterine segment is not increased in placenta prævia, while the venous circulation is markedly so. This last I can confirm from a preparation where the veins of the lower uterine segment are greatly increased. In regard to the mechanism of separation, nothing has been distinctly added to Duncan's clear description in 1873. The bleeding from separation is mainly venous, and the stretching of the lower uterine segment compressing these veins and the greatly thinned out arterial vessels, practically capillaries, must be a factor in arresting hæmorrhage, which, as we know, is almost entirely uterine. I need not at present delay to discuss Bayer's views, as he admits that there is a certain number of placenta prævia cases where the cervix remains intact, but urges that in others the hæmorrhage in the later months is due to an unfolding of the upper portion of the cervical canal.

Passing on now to the question of treatment, I have first to remark that the multifarious recommendations on this head must be weeded by setting up a standard to which any method must attain before it can be considered as safe or one to be recommended. The last standard I would recommend would be the statistical, as one can never exclude the possibility that the patient may have recovered in spite of the treatment. The criteria I would lay down are as follows. Any treatment of placenta prævia must conserve blood to the utmost. The obstetrician has always to remember that the worst bleeding may come after delivery, and if he has not conserved blood most carefully, the patient may sink from this later loss. Then the treatment should be one that avoids prolonged interference, that admits of thorough antisepsis, interferes as little as possible with the patient's convenience, and, above all, that puts the mother's safety first, and that of the foetus in a very secondary position. Thus I would exclude the repeated use of the vaginal tampon, as recommended by Auvard and others; any prolonged use of Barnes's dilators, though to a limited extent they are of the greatest value; and any rapid delivery through an imperfectly dilated genital tract. While no one treatment can be recommended as applicable in all cases, I would urge that when a patient has begun to lose blood definitely, chloroform should be given, the cervix dilated to admit two fingers, bipolar version performed, and a foot brought down. The case should then be left to terminate as a footling in its own time. The advantages of this method are, that it takes the minimum of time and interference, secures absolutely against further loss of blood, and enables the attendant to stimulate the patient for any risk yet to come. The rupture of the membranes, unless in minor cases, I would deprecate. Of course

it helps to arrest hæmorrhage, owing to the fact that the blood supply to the upper portion of the lower uterine segment passes through the lower portion of the actively retracting part, but it hinders version, and thus may cause a greater loss of blood than what it at first prevented.

As to the plan of complete dilatation with Barnes's bags, followed by rapid delivery, I have come to the conclusion that it increases the chances of the child's life at the risk of the mother's safety. The slow delivery need not specially endanger the child's life, avoids laceration of the mother, and, by allowing thrombosis, promotes the arrest of secondary venous hæmorrhage from the lower uterine segment marvellously.

I have now to speak briefly on the means of stimulation to be employed in ordinary cases. I would place in the first rank the repeated subcutaneous injection of sulphuric ether. The patient should be encouraged to drink plentifully, though slowly, of hot water, so as to increase the fluid in the vessels. I prefer hot water alone, as there is less chance of sickness and consequent loss by vomiting. If sickness is present, fluid enemata may be given. In a bad case, where hæmorrhage has been profuse before help arrives, autotransfusion by bandaging the limbs should be at once had recourse to. As to the question of venous transfusion, even by the safe and easy method we owe to Drs Cotterill and John Duncan, one's feeling always is, Is it necessary at present? We wait for indications, and while we wait our patient may suddenly sink. One is in a dilemma, anxious not to be fussy, and yet afraid to be too late. Have we, then, any means of transfusion which we may use, not because so much blood has been lost that we fear for the patient's life, but because we are afraid that further loss may endanger her safety? Now such a method, I believe, we have in the subcutaneous transfusion described by Münchmeyer. This method is simple, safe, and effective in cases where the loss of blood is not too great. It consists in the transfusion into the subcutaneous tissue in the infraclavicular or interscapular regions of a 0.6 per cent. salt solution at 100° F. The apparatus need consist only of a funnel, a few feet of india-rubber tubing, and a hollow aspiratory needle such as all practitioners have. This apparatus is sterilized with hot water, the funnel and tube filled, and the needle passed into the tissue. The funnel being held up, the solution passes in by gravitation, and is then massaged by the hand through the tissues. In this way several ounces can be passed into the circulation, and the bulk of blood increased. This is of great importance, as often there is not sufficient blood in the body to overcome the elasticity of the aorta, and thus the blood is not distributed over the body, owing to the collapse of the main arteries. There is blood in the body, but it is not available.

One final point in regard to treatment. I have already alluded to the risk of *post-partum* hæmorrhage. This may come from the



lacerated and oozing lower uterine segment. In such, if pressure and the hot douche fail, the practitioner can fall back on the iodoform gauze tampon as an addition, but not a substitute, to all means securing vigorous uterine retraction.

My personal experience of placenta prævia has been limited to twelve cases, with a maternal mortality of one, *i.e.*, about 8 per cent. Three of these were very desperate cases, as the patients had lost a large amount of blood before I saw them. The fatal case was one of these three; and I regret I took too long to dilate, so that the patient sank rapidly before the transfusion apparatus was ready. In one bad case afterwards, the subcutaneous injection was attended with the best possible results.

The subcutaneous transfusion has great advantages both in hospital and private practice. In hospital there should always be a flask of sterilized salt solution ready; and in cases of hæmorrhage sent in or occurring in the hospital, the house-surgeon, in addition to the use of ordinary remedies, can at once begin this form of transfusion, and thus save the time often lost while the physician is being summoned. Then in private practice the attendant can rapidly prepare simple salt solution at a temperature of 100° F., and with the simple apparatus mentioned, rally his patient. Where the loss of blood is profound, it will probably be better to use venous transfusion of the solution of blood and phosphate of soda recommended by Dr John Duncan.

In conclusion, we can now confidently say that the resources of the obstetrician in treating placenta prævia are in every way adequate, and that in cases seen in time the maternal mortality should be low. The mortality formerly ranged as high as 40 *per cent.* In the Berlin klinik it was 7·2 (Hofmeier), practically the average of my own cases; whilst Veit records twenty-five cases, with one death. I have no doubt that this mortality will ultimately be improved on. To this end there is needed, in my opinion, the strongest recommendation to the practitioner, of thorough antisepsis, early interference by Hicks' bipolar version, an avoidance of hasty delivery after turning, and the full utilization of the various means of stimulation prior to the end of the second stage.

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HOFMEIER.—*Die menschliche Placenta.* Wiesbaden, 1890.

KALTENBACH.—“Zur Pathogenese der Placenta Prævia,” *Zeitschrift der Geburtshilfe*, Bd. xviii., Hft. 1.

MÜNCHMEYER.—“Ueber den Werth der subcutanen Kochsalzinfusion zur Behandlung schwerer Anæmie,” *Archiv für Gynäk.*, Bd. xxxiv., Hft. 3.

#### IV.—ON THE TREATMENT OF PELVIC DISEASE BY ELECTRICITY.

By R. MILNE MURRAY, M.A., M.B., F.R.C.P.E., F.R.S.E., Assistant Physician, Royal Maternity Hospital; Lecturer on Midwifery and Diseases of Women, Edinburgh School of Medicine.

(*Read before the Obstetrical Society of Edinburgh, 12th March 1890.*)

It is now about three years since the attention of gynæcologists was drawn to the treatment of various forms of pelvic disease in women by means of electricity as practised by Apostoli. The results claimed for this mode of treatment were such as to arrest attention on the part of every one interested in this department of Medicine; and while at the hands of many these results were regarded with a more or less aggressive scepticism, they were by others deemed worthy of more extended examination. In spite, then, of a continuous and sometimes even violent hostile criticism, a large amount of attention has been given to the subject, and the literature has already reached formidable proportions. It goes without saying that much of this literature is of little scientific or practical value, except as showing the risks which patients sometimes run from the perfunctory zeal of their advisers to experiment on a new cure. Conclusions derived from the experience of one or two cases, whether apparently successful or not, can carry little or no weight either for or against the method of treatment. Besides, the question of the permanence of the effect could not be dealt with in cases which were reported the week after the final application. Time, indeed, was an essential requisite both to permit of the accumulation of sufficient material and to test the persistence of the influence. Towards the end of last year the Keiths published the results of their two years' work, and though they give no summary of these results, they detail the cases with considerable minuteness, and the reader can form his own opinions. Their experience has included a sufficient number of cases to warrant the drawing of safe conclusions, and the time elapsing since the first cases were treated permits the question of permanency of influence to be approached, though not of course settled.

At the January meeting of the Society Dr Fraser Wright read a paper giving a most carefully detailed account of twenty-three cases treated by electricity. The paper is of very great value on account of the care with which the condition previous and subsequent to the treatment was recorded. It gives an admirable account of the history of these cases, and the systematic accuracy of the observations in great measure compensates for the comparatively small number of cases as compared with those treated by the Keiths.

During the past two and a half years I have had some experience in gynæcological electro-therapeutics, and I accordingly propose to lay the results of this experience before you in the following paper.

The cases I have to record are forty-five in number. These include all in whom the treatment has been completed. I have excluded those still under treatment, and also a number of patients who came only once or twice, but who for various reasons were prevented from returning, and in whom no indication of any result could be obtained.

The cases have been treated partly in private and partly in St Luke's Home. And I have here to thank Dr Halliday Croom for his great kindness in sending me many of his private patients for treatment—a large proportion of my cases having been recommended by him. This on his part has been all the more generous, seeing that (I trust I am not breaking confidence in saying so) Dr Croom has never expressed himself as greatly impressed by either the rationale or the results of the method.

In the first place, then, I shall give a brief account of the general results of the treatment as illustrated in the tabular statement, noting in some detail the more important cases; and in the second place I propose to discuss some points connected with the rationale of electrical treatment.

## I.

I have presented the cases in four tables, which will be found at the end of the paper.

TABLE I.—Includes those cases in which the most prominent feature of the complaint was HÆMORRHAGE and consequent ANÆMIA. In this group there are twenty-three cases, and in all these hæmorrhage, menstrual or intermenstrual, in excessive amount, and notably anæmia, were prominent conditions.

In the majority of cases the treatment was carried out by the intra-uterine application of the positive pole. In two only was puncture of the tumour with the negative resorted to.

Columns 1 to 5 give the number of case, age, number of children, and condition previous to treatment.

Column 6 gives the sign and position of the internal electrode.

Column 7 gives the number of applications.

Column 8 gives the average strength of current.

Column 9 gives the total quantity of electricity employed, expressed in ampere-seconds or coulombs.

Column 10 gives the condition after treatment.

I shall hope to show that the figures in column 9 have a bearing of considerable practical importance. So far as I am aware, no one has previously recorded his dosage in these terms. They are obtained by multiplying the current in amperes by the time in seconds for each application, and taking the sum of the results during the whole course of treatment. They indicate the exact quantity of electricity employed in each case. From this we can determine the amount of *work* actually done on the tissues, and, as

I trust I shall be able to demonstrate, they enable us to draw some conclusions as to the *modus operandi* of the process.

Of the twenty-three cases, eight were single, fifteen were married, and of these nine were sterile.

Of the twenty-three cases, eighteen had a definite fibroid tumour as the cause of the hæmorrhage. In the others, endometritis and chronic metritis were the chief causes of the hæmorrhage.

In five cases (1, 3, 8, 11, 18) the treatment for various reasons was prematurely discontinued. In none of these cases were there more than eight applications, in most only three or four. Of the remaining eighteen cases, seventeen have been definitely relieved. In every case the hæmorrhage was checked after three or four applications, even when it had been continuous for months. As the result of further treatment, the intermenstrual periods have been prolonged, and the menstrual discharge diminished to a normal amount. The influence of one or two applications in cases of prolonged hæmorrhage was very remarkable. In one patient who had bled continuously for upwards of three months we found that the hæmorrhage entirely ceased for three weeks after the second application. At the end of this time what was a fairly normal period, lasting a week, occurred. The rapid improvement in general appearance and health of the patients is also well worthy of note. Nearly every one expressed herself as gratified by the increased comfort and fitness for exertion which she experienced early in the course of treatment.

The number of applications varied from 10 to 23, and the total quantity from 498 to 1884 ampere-seconds.

As regards frequency of treatment, I have found that twice a week is most convenient. Some patients might have it oftener with advantage, but on the whole one is wiser to err on the side of too seldom than too frequent applications.

Some of the cases are of exceptional interest, and I should like to refer briefly to one or two of them.

TABLE I., CASE 1.—Miss M., aged 42, single. October 25th, 1887.

For seven years suffered from menorrhagia. This has latterly much increased, and during the last six months the discharge has been almost continuous. Patient is much emaciated and anæmic. Complains of constant gnawing pain in the region of the stomach.

*P.V.*—Uterus erect or slightly backwards. To the anterior wall is attached a mass about half as large again as a closed fist, pressing down on the anterior fornix, very firm and resistant. Cervix high up and difficult to reach. Sound enters vertically  $5\frac{1}{4}$  inches.

*Treatment.*—Eight negative punctures through anterior fornix, and ten intra-uterine positive applications. Total quantity, 765.4.



*Result.*—Oct. 31.—After four applications hæmorrhage had quite ceased. Gastric pain seems increased temporarily after each application.

*Dec. 24.*—After fifteen applications there is a manifest difference in the size of tumour; is certainly not larger than an orange. A sinus 1 inch in depth remains at site of puncture. Two periods have occurred on 2nd November and 7th December, each lasting four days. No other hæmorrhage.

*Feb. 1, 1888.*—Since last report has been very well. Periods regular, painless, and of normal amount. Mass in front of uterus about size of hen's egg. Sound, 3 inches. Uterus quite movable. Gastric pain entirely gone.

*Jan. 1890.*—Reports herself in excellent health.

TABLE I., CASE 4.—Mrs R., age 47, married, seven children. October 1887.

For more than a year patient has suffered from profuse hæmorrhage at periods and other times. She is very anæmic and faint.

*P. V.*—Os patulous and soft. Sound,  $4\frac{1}{2}$  inches.

*Treatment.*—Ten positive intra-uterine applications. Total current, 498·4 ampere-seconds.

*Result.*—After five applications, profuse watery discharge occurred, which continued till December 6th. On this day it was found that a large mass was being expelled through the os, evidently a polypus, which fills the vagina. The stretched and thinned cervix can scarcely be reached by the finger.

*Dec. 8.*—Mass is breaking down and highly offensive discharge escaping.

*Dec. 15.*—A gangrenous mass, highly offensive, about the size of the fist, was expelled. From this date patient's recovery was uninterrupted. Discharged fourteen days later.

*Jan. 1890.*—Patient reports that since last note her periods have been regular and normal as to quantity, and her general health perfectly satisfactory.

TABLE I., CASE 9.—Mrs Y., aged 50, married, sterile. January 18, 1888.

For many years patient has suffered from chronic uterine hæmorrhage, often very profuse. There is frequently metrorrhagia, and menstruation is associated with much clotting of discharge. Patient is very anæmic, exhausted, and emaciated. No local cause can be ascertained. Uterus normal or slightly subnormal. Ovaries not palpable. Has been under treatment for years without any permanent benefit.

*Treatment.*—Thirteen positive intra-uterine applications. Total quantity, 616·9.

*Result.*—March 3, 1888.—Discharge has been much less during

course of treatment, and regular in occurrence. Patient has improved in appearance and gained in flesh.

*Jan.* 1890.—Patient reports that she is in excellent health. Periods have been regular and slight. Has gained in flesh, and is able for more exertion than she has been for many years.

*Feb.* 20, 1890.—Writes to say that since last week of January there has been a return of the discharge, continuous but slight in amount, and without clots.

*April* 2.—This patient has died of pneumonia.

TABLE I., CASE 17.—Mrs S., aged 35, married, two children. April 30, 1888.

Has been suffering from profuse periods for eighteen months. For last three months a sanguineous discharge has escaped almost continually, and large quantities of blood have been lost from time to time. Lately she has suffered from down-bearing pelvic pain. Patient is blanched, breathless, and quite unfit for her ordinary duties.

*P. V.*—The vagina is filled by a mass measuring about 5 inches by 3 inches. The widely stretched os can just be felt round the tumour.

*Bi-manually.*—The uterus cannot be felt, and sound enters 1½ inch only.

*Treatment.*—A pair of insulated platinum needles were plunged into the tumour as widely apart as possible and to 1½ inches in depth. A current from forty Leclanche cells was sent through, giving 200 m.a. This gave rise to no sensation. Eighteen such applications were made, with a total quantity, 1160·7.

*Result.*—*May* 21.—After seven applications, mass shrunken and more pediculated. Os can readily be felt. Mass breaking down in vicinity of punctures. Quite friable in some parts. There is a slight grumous discharge at times, but no bad odour whatever.

*June* 4.—Mass greatly reduced in size. It is now seen that uterus has been partly inverted, and a deep sulcus separates uterus posteriorly from tumour anteriorly. When the needles are plunged into anterior mass no sensation is produced, but when in posterior mass, acute pain is complained of.

*June* 25.—Sound now passes 3½ inches. Uterus can readily be felt bi-manually. Remains of polypus about size of walnut can be felt through the cervix. Since the commencement of treatment, patient has had three periods, normal in amount and duration. She has regained her normal strength, and is in robust health.

*Oct.* 1.—Periods since cessation of treatment in July have been perfectly normal, and patient in excellent health. The os still gapes sufficient to admit tip of forefinger. A nodule about the size of a hazel-nut can just be felt. Uterus forward; sound, 3½ inches; quite movable.

Of the eighteen cases referred<sup>1</sup> to, one only gave an unsatisfactory result. She was an unmarried girl of 26, who had a slightly enlarged uterus, with a fibroid nodule on the left side. She had twenty-seven applications, and a total quantity of 1884 ampere-seconds (the largest I ever gave), and yet at the end of five months she was little, if at all, better. I cannot account for this; unless, indeed, the fact that she was careless as regards her habits, exposing herself, in spite of all advice, to weather and fatigue, and most indifferent to the action of the bowels. Indeed, the rectum was often so loaded that I could scarcely pass the sound. Whatever may have been the reason, she certainly proved a failure, and the *only* failure I have had in a case of hæmorrhage pure and simple.

Since the patient left—eighteen months—she has not communicated with me, and no reply has been received to a letter of recent date.

In almost every case where hæmorrhage has been the prominent symptom I have employed, like most others, the intra-uterine positive pole. The results seem to justify this; and one would, moreover, conclude that this is the preferable method from observations on organised tissue outside the body, the dense, firm coagulum which surrounds the anode suggesting a “hæmostatic” influence.

It is worth noting that patients suffering from hæmorrhage only bear, as a rule, fairly large currents without inconvenience,—much larger, for example, than those in whom pain is at all a prominent symptom. I have found also that my results have improved since I have used more extensively an internal electrode of diminished length,—one in which the exposed metallic part is not more than  $\frac{3}{4}$  inch in length. This concentrates the current, increasing its density and local action, and the different portions of the uterine cavity can be successively treated by the use of the graduated slide in locating the active part of the instrument. This sound acts like Apostoli's carbon electrode, but has the advantage of being more readily introduced.



As to the menstrual period, I avoid making the application during the first three days, but find that the sooner it is applied thereafter the better. Generally on beginning treatment there is some discharge after the first one or two applications, and if the pain comes on soon after the treatment has been begun, it may be somewhat profuse, and the patient should be instructed to keep quiet at this time.

TABLE II.—This group includes those in which PAIN was the chief feature of the complaint. The causes of the pain varied. In some it was due to the presence of a fibroid, and in one or two of those cases it was associated with hæmorrhage. In others it was due to a perimetric deposit, and in two or three to ovaritis.

There were in all fourteen cases. Of these, Nos. 11 and 12 had to discontinue treatment after five and three applications respectively. Of the others, seven were relieved of the pain in a marked degree, and five were not materially benefited.

The proportion of successes in the cases where pain is the prominent symptom is much less than in the hæmorrhage cases. The cases in which the most marked relief was obtained were undoubtedly those in which an exudation was present to account for the suffering. One of these—Case 5—is of especial interest, not only as bearing upon the relief of pain, but especially in relation to the absorption of inflammatory deposit,—a result on which Apostoli and many others lay considerable stress.

The case is one of considerable interest, as the following brief history will show:—

TABLE II., CASE 5.—Mrs A.; aged 35; no children. Nov. 23, 1887.

Patient has suffered for years from an extensive cellulitic deposit, which fills the pelvis, depressing the vaginal roof and fixing the uterus. During the previous summer the mass had opened into the rectum, causing an intermittent purulent discharge. With a view to the possibility of drainage, Dr Halliday Croom opened the abdomen in June of this year. It was found that the pelvis was roofed in by a mass of solid resistant deposit, which gave no possibility of interference. The patient recovered satisfactorily from the operation. From this time until November the escape of pus was very profuse, and the pain at times very great.

*Nov. 23.*—The bulging mass was punctured in the posterior fornix, and 30 m.a. passed for four minutes. This was repeated four times at intervals of a week.

*Jan. 14, 1888.*—Mass in the fornix so ill-defined that puncture could not be effected, and sound accordingly passed into the uterus and connected positive. One hundred m.a. were passed for five minutes. This treatment was repeated once or twice a week until the 25th of July, twenty-five applications being made. Total quantity, 780 ampere-seconds.

*Result.*—The patient at first was treated at her own house, but after the fourth application she was able to come in a cab to the Home.

*March 17.*—Patient has walked three-quarters of a mile without undue fatigue. The mass is so indefinite that it cannot be outlined bi-manually. The discharges of pus are smaller and far less frequent, and the patient is immensely improved in health and comfort.



*June 20.*—Patient is fit for her ordinary duties, and can walk a reasonable distance with comfort. She has gained in weight, and says she is practically quite well.

*P. V.*—Careful bi-manual examination reveals an indistinct fullness, free from pain, behind the uterus. The latter is freely movable, and otherwise the pelvis is normal.

*Jan. 1890.*—Patient reports that she is in excellent health, free from pelvic discomfort, and without purulent discharge for a long period. No vaginal examination was made.

Here, then, is one case at least where the electrician can claim a success which was denied to the surgeon. The abdomen was opened by an expert. The condition was definitely recognised, and pronounced irremediable by ordinary surgical procedure. The patient, after a few months, was handed over to the electrician, and in due course was relieved of her constant pain, was restored to comparative health, and rendered capable of performing the major part of her duty in life. I do not claim that the pelvis is restored to its normal condition, nor am I to guarantee her permanent immunity from a recurrence of her trouble; but I claim, in all humility, that electricity has given her a chance of continuing her rôle in life, and that was more than surgery could do.

The failure of electricity to relieve many of the cases of pain is not remarkable. Most of these cases were complicated with organic change in the ovaries, to which the pain was no doubt largely due. And I cannot say that I have seen any definite benefit from the use of galvanism in any case where there was evidence of structural change in these organs. I daresay some of these cases are palliated by faradism; but my experience of this treatment is limited and of little account. On the other hand, the rapid diminution in the bulk of pelvic exudations, many of them of long standing, is a common experience. Apostoli lays great stress on this effect, both in his early, and especially in his later papers. Dr Fraser Wright in his paper records one most remarkable case, in which a great diminution of such a mass followed a comparatively short course of treatment. No doubt we are aware of many instances where a large pelvic exudation ultimately practically disappeared, but these are either cases of suppuration, or else they extend their course over months or years.

In these cases of pelvic cellulitis the application was made either by puncture into the mass, or else by indirect application through the uterus, or through the vaginal roof at the point nearest to the mass.

The rationale of this action is by no means clear; but I shall defer discussing it until the second part of this paper.

(*To be continued.*)

## V.—THE HEAD OF THE INFANT AT BIRTH.

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(Read before the Obstetrical Society of Edinburgh, 16th July 1890.)

## PART II.

IN a former communication to this Society upon the subject of the Head of the Infant at Birth, in February of this year, the size and shape of the cranium and the characters of the osseous framework of the head were described, and special attention was paid to the results which were obtained from the frozen sectional method of investigation. In the present paper it is my wish to complete the consideration of this subject by the study, by the same method, of the soft parts of the head of the new-born child. The material from which the following conclusions were drawn consisted of five full-time infants, one eight months' and one seven months' foetus, and the frozen sectional method of research, which is now too well known to require description, was that employed. The brain and its membranes, the ear, the orbits and their contents, the nasal cavities, and the buccal cavity and sucking pads may now, without further preface, be described.

*The Membranes of the Brain and the Cranial Sinuses.*—In the infant at birth the arrangement and relations of the membranes of the brain do not differ in any marked way from those found in the adult; but there is a peculiarity as regards the relation of the cranial sinuses to the cranial vault which it is of importance to consider. The superior longitudinal venous sinus lies immediately beneath, and is in relation to the frontal suture, the anterior fontanelle, and the sagittal suture; and, as there is during parturition a varying amount of displacement of the borders of the parietal bones which form the boundaries of the sagittal suture, it follows that a considerable strain is put upon this venous sinus, with the result that occasionally rupture of the walls of the bloodvessel occurs, followed by extravasation of blood into the membranes. In two of the still-born full-time infants extravasations of blood, in one case into the falx cerebri, in the other into both the falx cerebri and tentorium cerebelli, were found; and I believe that this form of intracranial cephalhæmatoma is not nearly so rare as an examination of the literature of the subject would lead us to believe. M'Kee, in a paper on "Intra-cranial Cephalhæmatomata" (*Medical Record*, 26th September 1885), lays special stress upon the great rarity of this variety as compared with the extra-cranial; but it is probable that the rarity is more apparent than real, for whilst all cases of the external blood extravasations are easy to diagnose during life, the

intra-cranial effusions give rise to symptoms which may be, and no doubt often are, ascribed to other conditions; and, further, post-mortem examinations of the brain of infants are neither easily obtained nor often carried out. Charpentier also (*Traité des Accouchements*, vol. i. p. 294) comments on the rarity of these cases, and points out their frequent association with placental disease, especially hæmorrhagic, and with the coiling of the umbilical cord round the child. In both the cases in which I found intra-cranial meningeal hæmorrhage in the new-born there was placental disease; and in one case, at any rate, the head was subjected to great and continued pressure, for the position was a persistent right occipito-posterior, and forceps were ultimately used to deliver the child. There was also coiling of the cord round the neck of the infant. In both cases the hæmorrhage was meningeal, and could be traced from the tentorium cerebelli to the falx cerebri, and from the falx to the superior longitudinal sinns. In one of the cases there was also a large extra-cranial cephalhæmatoma of the sub-aponeurotic variety; but in the other case there was no blood extravasation outside the cranium, although there was an unusually large caput succedaneum. All authorities are agreed that the cerebral form of hæmorrhage is extremely rare in the new-born, and I have seen no example of it. In early life the meningeal form of hæmorrhage is more common than the cerebral, whilst in old age the cerebral variety is much more often met with than the meningeal, and this difference is due to the absence of disease of the arteries in early life and the comparative frequency of atheromatous changes in the senile vascular system. It is very probable that many cases of meningeal hæmorrhage in the new-born, beyond causing some difficulty in the resuscitation of the infants affected, and some transient paralytic or convulsive symptoms which are often unobserved, result in complete recovery.

*The Brain.*—In the new-born infant the brain, on account of its fluid condition, is a difficult organ to study topographically, yet a great deal has been accomplished in late years to clear up the relations of the cerebral fissures and convolutions to the cranial sutures and fontanelles. Various methods of research have been employed in the study of cerebral topography, but none of them have been found quite satisfactory. In the infants examined by the frozen sectional method I endeavoured, before the sections were quite thawed, to trace the relation of the fissures to the cranial sutures, with the following results:—

*The Sylvian fissure*, which, according to most authorities, is in the adult on a level with the speno-parietal and squamous sutures anteriorly, is in the infant at a higher level *quâ* the cranium. In a child of one year and ten months, Symington found that the Sylvian fissure lay under cover of the parietal bone about half an inch above the level of the squamous suture, and my sections of the infant at birth fully bear out this observation.

Thus in one case the fissure lay 1·5 ctns. above the suture, and in another case 1·7 ctns. above the level of the squamous suture. It is believed that the change in the relative position of the fissure and the suture to be found in the adult is due both to the ascent of the squamous suture and to the descent of the Sylvian fissure from widening of the base of the brain. It was also noted—and the fact may be of some value in the cranial surgery of the infant—that the fissure lay at a level about 2 ctns. above the helix of the ear. The *great transverse* fissure of the cerebrum, which passes into the descending horn of the lateral ventricles, was seen to be as closely as possible on a level with the squamous suture, and a little above the tip of the ear externally. The *great longitudinal fissure* of the cerebrum, which contains the falx cerebri, followed, in the infants examined, the middle line of the head with considerable exactness, and lay immediately beneath the frontal and sagittal sutures and the upper branch of the linea cruciata on the inner surface of the occiput. It lay also under the anterior fontanelle in its antero-posterior diameter. Knott found that in the great majority of cases it had similar relations to the cranial vault in the adult ("On the Cerebral Sinuses," J. F. Knott, *Journal of Anatomy and Physiology*, vol. xvi. p. 27). The *parieto-occipital fissure* was located in several of my specimens. It marked the division between the parietal and occipital lobes, and corresponded in level with the tip of the occipital bone at the posterior fontanelle, lying rather behind than in front of the lambdoidal suture. According to Broca and Bischoff this is also its position in the adult; but Sir William Turner places it '7 or '8 of an inch in front of the lambdoidal suture—a statement with which Professors Ecker and Hare concur. Hamy (*Revue d'Anthropologie*, 1872) agrees with Broca as to its position in the adult, but finds that in the new-born infant it lies a few millimetres in front of the lambdoidal suture. The *fissure of Rolando*, which divides the frontal from the parietal lobe, lies in the adult under cover of the parietal bone and behind the plane of the coronal suture; but in the infant, according to Hamy, the frontal lobes being less developed, it lies relatively further forwards, the upper end of the fissure being behind the coronal suture, whilst the lower end lies under cover of the frontal bone. In one of my cases exact measurements were made which showed that the upper end of the Rolandic fissure lay 4·2 ctns. behind the coronal suture, whilst the lower end reached almost to that suture. In this case also the fissure appeared to be less vertical than in the adult. The *calcarine fissure* seen on the internal surface of the cerebral hemisphere which separates the cuneate lobe from the uncinatate convolution, and which, with the parieto-occipital fissure, serves to mark off the cuneate lobe, was traced in two of the infants examined, and was found to lie about 1·5 ctm. below the parieto-occipital suture, and approximately opposite to the occipital protuberance. No special facts of interest with regard to the



remaining lobes, convolutions, and fissures of the brain in infants were brought out in these researches, but in connexion with the vexed question of the degree to which the cerebrum overlaps the cerebellum in the new-born infant a word or two may be said. D. J. Cunningham (*Topographical Anatomy of the Chimpanzee, Orang, and Gibbon*, 1886) states that the overlapping is not so great in the infant as in the adult condition, and finds that in the case of mesial sagittal sections the cerebrum overlaps the cerebellum to the extent of 9 mms. in the male infant and 7 mms. in the female infant, whilst in the adult male the overlapping is to the extent of 25.5 mms., and in the adult female brain to that of 27 mms. Symington, however, found that in two male infants the projection in the middle line was 20 mms. and 19 mms. respectively, a projection relatively greater than that in the adult. In one of my cases the cerebrum measured 11 cms. in length, and overlapped the cerebellum to the extent of 20 mms. In a second case the cerebrum was 8.5 cms. in length, and the projection beyond the cerebellum was 15 mms. These measurements, therefore, support Symington in his conclusion that relatively the cerebrum overlaps the cerebellum as much or more at birth than in adult life; at the same time we must, as this observer points out, remember the fact that in the infant the cerebellum is relatively small.

It will be seen from much that has been said that cerebral topography in the adult, but also more markedly in the infant, is still a very inexact science; but with the discovery of more satisfactory methods of rapidly hardening the brain *in situ*, it is certain that the subject will soon be put on a more exact basis, and that the relation of the cerebrum to the bones of the skull will be as well known as those of the heart and lungs to the thoracic parietes.

The *Pituitary Body or Hypophysis Cerebri* is of great importance, as marking the line of demarcation at the cephalic end of the foetus between stomodæum and encephalic vesicles and canal of the spinal cord, exactly in the way that the coccygeal body at the caudal extremity of the foetus marks the spot where the hind-gut and the lower end of the central canal in the spinal cord meet. Bland Sutton suggests what he even terms the somewhat startling conclusion, that the tube which primarily represents the central nervous system in the vertebrate embryo must be regarded as a disused segment of the primitive alimentary canal, connected with the gut anteriorly by the cranio-pharyngeal canal, and posteriorly by the neurenteric canal or passage (post-anal gut). The meeting place of the narrow tubular portion of the anterior primary encephalic vesicle, known as the infundibulum, with the buccal epiblast is marked by the pituitary body. Bland Sutton goes on to state that, even at the mid-period of intra-uterine life, a narrow cavity may be detected passing from the pharynx through the basisphenoid so as to come into close relation with the infundibulum.

This cavity is afterwards represented by a band of fibrous tissue, which disappears in the macerated sphenoid, leaving what is known as the *canalis cranio-pharyngeus* of Landzert. In one of my cases, a dropsical infant, in the mesial section of the head the pituitary body was seen resting on the sella turcica of the sphenoid, and in the cartilage joining the basi-occiput and basi-sphenoid was seen a narrow cavity closed both at its pharyngeal and cranial end. This cavity, I have no doubt, represented the *canalis cranio-pharyngeus*, and its presence in this infant supports Bland Sutton's statement that the alimentary and central spinal canals are continuous in the vertebrate embryo. Another piece of evidence in support of this view is to be derived from the well-known fact that in monsters with a deformed nervous system (as the anencephalic foetus) there is frequently also deformity of the alimentary canal, *e.g.*, constriction of the stomach or intestine, an example of which I found recently in the dissection of a monster of this variety.

In a coronal section of the head in one of the infants examined the *vidian canal and nerve* were well shown. The vidian nerve, which passes from the spheno-palatine ganglion backwards through the vidian or pterygoid canal at the base of the pterygoid process of the sphenoid, is relatively large in the infant at birth. The vidian canal also is large at birth, so large that it was only on subsequent dissection that I was led to a correct conclusion with regard to its character.

*The Ear.*—The ear of the infant at birth presents two peculiarities,—one is the very complete development of the internal ear, the tympanic cavity and ossicles, and the mastoid antrum; the other is the rudimentary state of the external auditory meatus, the mastoid portion of the temporal, and the Eustachian tube. The most important characters which distinguish the infantile from the adult ear are, therefore, to be found in connexion with the last-named parts. The imperfect ossification of the temporal bone, and more especially of its tympanic ring at the time of birth, explains the condition of the external auditory meatus. In the infant also the skull in the region of the ear is in a transition stage: there is anteriorly the antero-lateral fontanelle, which becomes the region *pterion*; whilst behind the ear is the postero-lateral fontanelle, the future region *asterion*. At and between these two fontanelles is found a medley of small bones and cartilage islands, which have no small importance from the point of view of the pathologist. It is not, however, within the scope of this paper to consider the development of the temporal bone, a subject upon which there is as yet no general agreement among embryologists. Suffice it to state, that it is chiefly through the imperfectly developed condition of the tympanic and squamoso-zygomatic portions of the temporal bone at the time of birth that the outstanding characteristics of the infant's ear are produced.

*The External Auditory Meatus.*—In several of the coronal sections

of the heads that were made I was fortunate enough to open into the meatus in the greater part of its extent (Fig. 2). The osseous part of the meatus is insignificant in the infant, being represented by the annulus tympanicus. This ring of bone afterwards grows out to form the floor and the anterior and part of the posterior wall of the adult meatus. The roof of the osseous meatus is formed by the squamosal element of the temporal bone, which in the infant slopes gradually inwards towards the membrana tympani. In the adult the squamous part of the temporal forms at this point a much sharper angle than it does in the infant. From the annulus tympanicus a fibrous membrane is seen passing outwards to two or three pieces of cartilage, and the membrane and the cartilages together form the floor of that part of the meatus which is not ossified. It is in this membrane that ossification occurs, leading to the formation of the tympanic plate; and Symington therefore suggests for this membrane the name "membranous or fibrous tympanic plate." The spaces between the cartilages at the outer end of the external auditory meatus are known as the fissures of Santorini. Whilst the floor of the meatus is thus membranous at birth, the roof is osseous, for the pars squamosa turns inwards, as already described, to constitute this part of the canal. It is correct, then, in the infant, as in the adult, to speak of an inner osseous part of the meatus and an outer cartilaginous portion; but in doing so it must be remembered that in the infant the inner part is osseous only in the roof, the floor being entirely membranous, or nearly so, for the tympanic ring forms only a slight projection. It is wrong to state that the external auditory meatus is entirely cartilaginous in the new-born; it is partly osseous, partly membranous, and only to a very small extent cartilaginous. In the adult it is customary to look upon the osseous part of the canal as constituting two-thirds, and the cartilaginous part one-third of the total length of the meatus; but in the child at birth a very different proportion exists, for then the inner third alone is osseous, and that only in the roof, the floor being made up of the fibrous tympanic plate.

Varying statements have been made with regard to the length of the external auditory meatus in the infant. It has been stated to be short and rudimentary, and so it does appear if the skull only be considered, but if the soft parts are in position the canal is seen to be of considerable length. In two cases (one an infant at birth, the other an infant that died on the sixth day of life) I found that the upper wall of the meatus measured 19 mms. in length, and the floor 21 mms., the difference in the length of roof and floor being due to the oblique position of the membrana tympani. Symington comes to the conclusion, from the study of coronal sections of infants and young children, that the external auditory meatus is relatively as long or longer in the infant and child as in the adult, and the measurements in my cases fully support this statement; in fact, the figures in the two cases above alluded to

are even greater than those found by Symington in full-time infants.

In infants the external auditory meatus has a general inclination downwards as it passes in towards the tympanum; but it has, as a rule, no anterior or posterior curve, for coronal sections of the head in this plane usually expose the meatus in its entire extent, although sometimes a small portion of the external ear has to be removed to show the outer end of the meatus. The inner (tympanic) end of the canal is a little larger than the rest of the meatus, and is called the sinus of the meatus; should a foreign body, therefore, get lodged in this part of the meatus, its extraction is a matter of considerable difficulty.

The *membrana tympani* forms the boundary between the tympanic cavity and the external auditory meatus. It is directed obliquely in the infant as it is in the adult, but some authors state that it is much more oblique, nearly horizontal, in fact, in the infant. I have been able to convince myself, from the study of several frozen sections, that the membrane is not horizontal, although the fact that the external auditory meatus has a downward trend gives to the tympanic membrane an appearance as if it lay almost transversely. In one case I found that the membrane formed an angle of  $12^{\circ}$  with the floor of the meatus and of  $33^{\circ}$  with the horizon. In the adult it is stated to form an angle of  $45^{\circ}$  with the floor of the meatus.

*The Tympanic Cavity.*—One of the coronal sections (Fig. 2) showed very clearly the division of the tympanic cavity into two parts, the narrow *atrium* internal to the *membrana tympani*, and the broader *attic* above the level of that membrane. The cavity was seen also to have an irregularly triangular shape, the base being formed by the roof of the tympanum, and the apex by the narrow floor immediately internal to the tympanic membrane. The tympanic ossicles, malleus, incus, and stapes, were seen dividing the attic into an inner and an outer compartment, and their relations are the same as in the adult middle ear. In all the above-mentioned characters the tympanic cavity in the infant does not differ from that in the adult, but there is one point of difference of some clinical importance which has yet to be noticed, and that is the presence in the roof of the attic of an unossified suture. The roof of the tympanic cavity is formed by an outgrowth from the *pars petrosa*, which joins the squamosal part of the temporal bone; and at the point of junction there is, in the new-born infant, a suture, the *petro-squamous*, which, as Symington points out, increases the risk of inflammation in the tympanic cavity spreading to and involving the membranes of the brain. Clinical evidence shows that this complication of ear disease is very common in the infant, and that therefore the prognosis in otitis media occurring in early life is graver, but at the same time it must be remembered that the thinness of the mastoid portion of the bone will render the opera-



tion of trephining comparatively easy at this age and at this spot. If pus form here, and if the diagnosis be made with any degree of certainty, trephining the mastoid is indicated.

*The Mastoid Antrum.*—The mastoid cells are not developed till after puberty; but, as Symington has shown, there exists in that part of the periotic bone which is named the pars mastoidea a large space, the antrum, which communicates with the tympanic cavity. In all the infants that were examined I found this mastoid antrum, and noted that it had, like the tympanic cavity, a very thin roof, which formed the only separation between it and the cerebral membranes. As the infant grows older, the walls, and especially the roof of the antrum, get thicker, and about the time of puberty become hollowed out into air-cells, which communicate with each other and with the cavity of the antrum. No reference is made to the presence of the mastoid antrum in the ear of infants in the ordinary anatomical text-books.

*The Eustachian Tube.*—The Eustachian tube is short in the infant. In one of my cases it measured 18 mms. in length, and Symington in two nine months' fetuses found that its length was 17 and 18 mms. respectively. In the adult it measures from 35 to 36 mms., or twice its infantile length. Its direction is different in the infant from what it is in adult life, for in the infant it runs almost horizontally. In one case it was traced throughout its whole course, and was found to run backwards with a slight inclination outwards and downwards, forming an angle of about  $10^{\circ}$  with the horizon. The osseous part of the Eustachian tube can scarcely be said to be present at all in the infant, although in the adult it forms one-third of the tube. The cartilage of the tube is peculiar in form, being deficient inferiorly and externally. The pharyngeal end of the tube is small in infants, and lies in the same plane as the inferior meatus of the nose. Its aperture is peculiar, there being a prominent margin above and internally, which is wanting below and externally; and this peculiarity makes the passage of the Eustachian catheter less difficult than it would otherwise be. At its tympanic end it is difficult to say where tube ends and tympanic cavity begins, for the roof and walls of the tympanic cavity gradually approximate to form the tympanic end of the tube.

*The Face.*—The relatively small size of the face as compared with the cranium in infants is rendered very evident by frozen sections, especially those in the vertical sagittal or transverse planes. In a sagittal mesial section the greatest vertical diameter of the face is less than 5 ctms., whilst the greatest vertical diameter of the cranium is more than 10 ctms., and the difference is even more striking when antero-posterior measurements of the two regions are compared together. The face of the infant is nevertheless an important part, for physiognomy is a useful guide to the diagnosis of infantile maladies; and, further, the obstetrician requires to be able to recognise this region of the infant's body

when it presents, as it occasionally does, at the os uteri. In making the diagnosis of a face presentation, one is usually instructed to feel the mouth, nose, eyes, supra-orbital ridges, malar prominences, and chin; and at first sight the presence of so many important landmarks would lead one to believe that the diagnosis must be an easy one. I have, however, been struck with the frequency with which students of the tutorial midwifery class in our University fail to recognise the face of the infant, or mistake it for some other part of the body, as the breech. The difficulty is, I believe, due to the fact that the child's face differs in several details from that region in the adult; thus the mouth does not contain teeth, and therefore is sometimes mistaken for the anus, a mistake which should not, however, arise, were the gums carefully felt for. The nose also at birth does not form the prominent feature that it does in adult life, and is liable to be mistaken for the tip of the sacrum and coccyx. Another diagnostic landmark is the eye, and some authorities advise that this organ should be felt for in making the per vaginal examination; but I must say that I think the less the obstetrician palpates the eye the better, for cases are on record where the enthusiastic tyro has done damage to this organ in his efforts to diagnose a face case. The supra-orbital ridges are useful landmarks, and so is the chin; but in the infant the chin is, on account of the rudimentary state of the inferior maxilla, a less prominent feature than in the adult. There need never be much difficulty in the diagnosis of a face case if the mouth and gums be recognised.

*The Superior Maxilla.*—The relatively small size of the superior maxilla is one cause of the small dimensions of the infant's face. In the child at the time of birth the antrum of Highmore is a small cavity, and therefore the body of the upper jawbone is also small; and further, the alveolar process of the superior maxillæ is also in a rudimentary condition, from the imperfect development of the teeth. From an increase in the size of the antrum of Highmore, from an enlargement of the alveolar processes, and from the development of the teeth, the growth of the superior maxillæ and of the corresponding part of the face is brought about. The inferior maxilla also is small at birth, its symphysis is not fully ossified, and its angle is an obtuse one; but the development of the teeth during childhood brings it to its adult form and size.

The skin of the face is not so loosely attached to the subjacent bones as is that of the scalp, and hence in face presentations a marked caput succedaneum is rarely developed.

*The Orbits and their Contents* (Fig. 1).—The orbits and eyeballs do not differ in the infant from the same parts in the adult. In several of the frozen sections made the relations of the parts within the orbit were very clearly brought out. The eyeball measures a little more in its antero-posterior diameter in the middle line than in either its vertical or transverse diameters, the measurements being about 1·7 ctm. antero-posteriorly, and 1·5 ctm. vertically and hori-

zonally. In one of my cases the pupillary membrane was still present. In a plane immediately posterior to the eyeball the muscles have the following relations: the levator palpebræ superioris and the superior rectus lie in close apposition to the roof of the orbit, and are related externally to the lachrymal gland; near the inner wall is the internal rectus, and immediately above it is the superior oblique; close to the outer wall is the external rectus, and near to the floor is the inferior rectus, with the inferior oblique lying internal to it. The optic nerve does not lie in the axis of the orbit, but is nearer to its inner than to its outer wall, and its excentric position is more marked as it nears the eyeball; thus in one of my cases it lay 1.1 ctm. from the outer wall and 7 mms. from the inner wall (Fig. 1). As a result of this disposition of the nerve, the external rectus is the muscle which lies furthest from the optic nerve in its course through the orbit. The large amount of fat lying behind the eyeball is well demonstrated in frozen sections of the head.

*The Nasal Cavities* (Fig. 1).—The nasal cavities in the new-born infant are relatively small, but in childhood they grow quickly as the surrounding bones and air-cells increase in size and the posterior nares broaden out. The superior meatus has an average length of 1.5 ctm., and passes between the superior and inferior turbinated parts of the ethmoid. The middle meatus measures about 1.8 ctm. in antero-posterior extent, and lies between the inferior turbinated part of the ethmoid and the inferior spongy bone. The inferior meatus, which is the longest, measuring about 2 cms., lies between the inferior spongy bone and the floor of the nasal fossa. In one of the infants examined the fourth meatus of the nose was present. It is called by Meyer the recessus sphenothmoidalis, and divides the superior turbinated part of the ethmoid into two portions, to the upper of which the name of concha suprema is given. Into the infundibulum the antrum of Highmore opens by a narrow chink. The septal cartilage of the nose showed in the cases examined no sign of any lateral deviation. The mucous membrane lining the nasal cavities is very vascular, and the specimens I have seen lead me to believe that it is more vascular in the new-born infant than in the adult. It may be, therefore, that at birth, when the first inspiration of air into the delicate lungs is taken, a special arrangement is made to warm the air passing in. In two of my cases the soft palate was seen to be tilted up at its posterior end towards the nasal fossæ, a circumstance which may have been due to attempts to expel mucus from the respiratory passages.

*The Buccal Cavity*.—In all the sections of the heads of infants which I have made, the mouth was seen as a potential cavity, the dorsum linguæ came into contact with the vault of the palate above, and the tongue was in apposition to the inside of the cheeks and gums laterally. In all the specimens, also, the tip of the tongue lay upon the upper surface of the lower gums. It is

a fact worthy of note, that even when the mouth is tightly closed the gums do not come into contact. This fact, which is revealed by frozen sections, Symington specially dwells upon as showing that provision exists at birth for a considerable development of the alveolar arches and teeth before the gums of the two jaws can really meet. I have not, however, been able in my cases to show that the distance between the jaws is so great as Symington found it, namely 6 mms., for in the specimens examined it measured from 2 to 4 mms., and in one case the jaws were in contact. Another peculiarity about the buccal cavity in the new-born infant is the fact that the lower jaw lies in a plane posterior to that of the upper jaw. In a sagittal vertical section of the head, the anterior surface of the lower jaw is seen to lie in the same vertical plane as the posterior surface of the upper jaw. As life advances the jaws come into line with each other, and with the development of the teeth the space between the gums disappears.

If the tip of the tongue be raised in the case of the new-born infant, two folds of the mucous membrane are seen, one of which, the larger and outer, has a dentated margin, and is called the *plica fimbriata*; the other, which is smaller and is situated nearer to the middle line and the frenum, is known as the *plica sublingualis*. In one of my cases there was found under the tongue on the right side a congenital ranula which contained a small quantity of clear limpid fluid (Fig. 1).

*The Sucking Pads* (Fig. 1).—H. Ranke has in a recent paper (*Ein Saugpolster in der menschlichen Backe*, *Virch. Arch.* Bd. xcvii. pp. 527–547) drawn special attention to pads of adipose tissue which exist in the cheeks of new-born infants, and which are, as Symington shows, present also in the child. Ranke was led to the study of these bodies by the fact that in a child one year old, in a state of great emaciation from continued diarrhoea, the cheeks presented a swollen appearance. This swelling he found to be due to the presence of a distinctly encapsulated mass of adipose tissue, the so-called sucking pad (*Saugpolster*.) He made sections of the face, coronal and horizontal, in the new-born infant, and also dissections from the skin surface inwards, and found that these pads were distinct structures which were not continuous with the subcutaneous adipose tissue. In several of my sections the relations of these pads could be seen, and they were always easily differentiated from the surrounding fat from the fact that on putting the sections into spirit the pads changed their colour slightly, and shrank from the adjacent tissues in one case to the extent of being easily removable. Each pad lies in the neighbourhood of the duct of the parotid gland, upon the buccinator, and partly upon the masseter muscle, and has superficial to it the *musculus risorius* of Santorini. An offshoot from the pad passes into the sphenopalatine and zygomatic fossæ. Each has a vertical diameter of about 2 ctm., a transverse of about 1.5 ctm., and an antero-



posterior of a little over 1 ctm. They are found not only in the infant but also in the child and adult, and are present even when the adipose tissue in other parts of the body is extremely small in amount. They are no doubt connected physiologically with the act of sucking, hence the name of sucking cushion given to them, and probably act by distributing equally the atmospheric pressure, and preventing the drawing inwards of the buccinator muscle between the gums during the efforts of suction when a vacuum is created in the buccal cavity.

#### DESCRIPTION OF PLATE.

FIG. 1.—Coronal section of head in plane posterior to the eyeballs (viewed from behind),  $\frac{5}{8}$  nat. size. *a*, frontal suture; *b*, longitudinal sinus; *c*, longitudinal fissure with falx cerebri; *d*, beginning of Sylvian fissure; *e*, left optic nerve; *f*, left sucking-pad; *g*, cystic tumour below tongue; *h*, tongue cut transversely; *k*, right nasal fossa, showing superior, middle, and inferior meatuses; *l*, orbital plate of frontal bone; *m*, zygoma near its root; *n*, tooth germ in upper maxilla.

FIG. 2.—Coronal section of head in plane of the middle ear viewed from behind, right side slightly posterior to left,  $\frac{5}{8}$  nat. size. *a*, external auditory meatus (left); *b*, membrana tympani; *c*, lobule of left ear; *d*, helix of ear; *e*, odontoid process of axis vertebra; *f*, basi-sphenoid; *g*, incus, with stapes in fenestra ovalis; *h*, petro-squamous suture in roof of tympanic cavity; *j*, Sylvian fissure; *k*, squamous suture; *l*, sagittal suture; *m*, superior longitudinal sinus; *n*, lateral ventricle; *o*, third cerebral ventricle.

### VI.—THE CO-EXISTENCE OF HEART DISEASE AND PELVIC LESIONS.

By J. D. WILLIAMS, M.D., Freeland-Barbour Fellow (1888) Univ. Edin.

(*Read before the Obstetrical Society of Edinburgh, 14th May 1890.*)

It is a source of much pleasure to me, Mr President, to have the honour of bringing before you the following statistics upon the co-existence of organic heart disease and pelvic lesions.

They are based upon observations made on the pelvic organs in a series of 61 consecutive cases in the Gynæcological Laboratory of the University of Edinburgh during the last two years. The pelvic organs were carefully removed from the body at the post-mortem theatre of the Royal Infirmary, and carried over to the University in a jar of spirits, where a more detailed examination was made, and microscopical specimens prepared of interesting diseased tissues. Notes were always taken of the general morbid conditions, and in as many cases as possible the clinical history was ascertained. Most of the cases referred to in this paper came from the medical and surgical, and a few from the gynæcological wards of the Royal Infirmary.

The question of the frequency of the co-existence of organic valvular disease of the heart and pelvic lesions in the female has

Fig 1

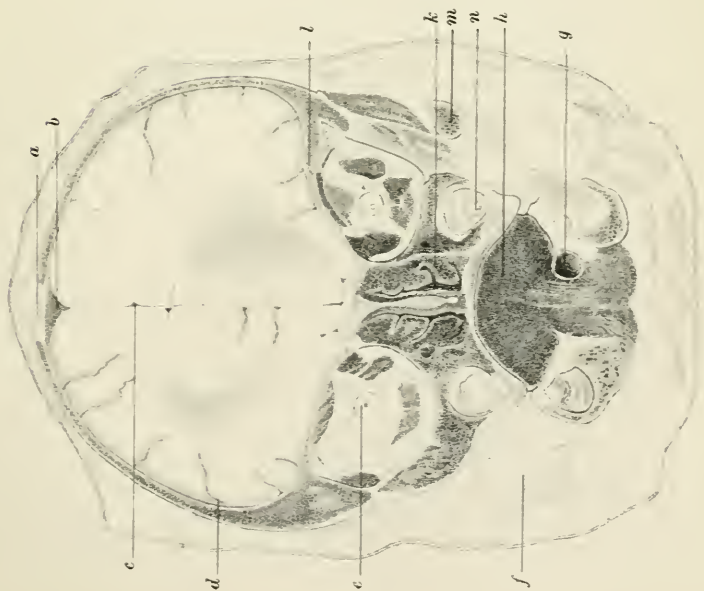
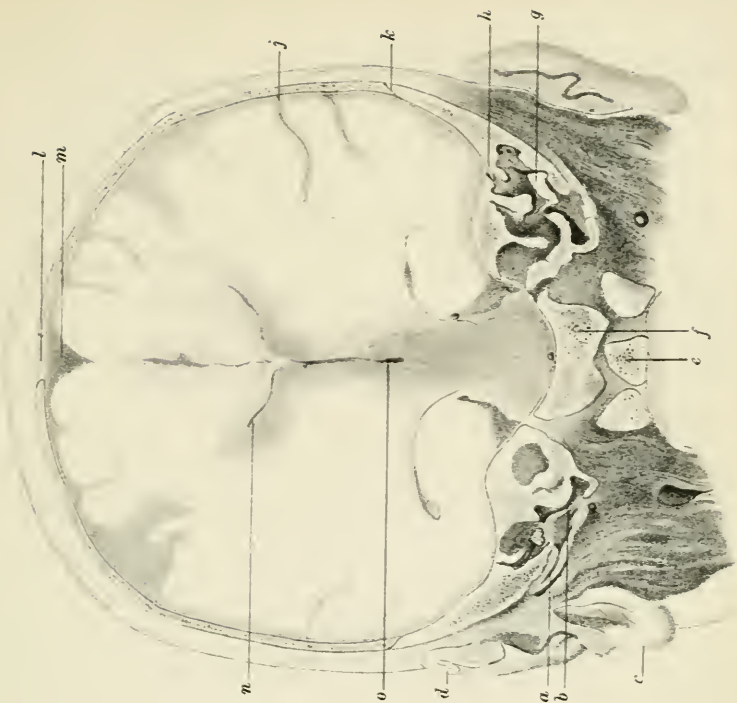


Fig 2





never, so far as I know—my knowledge of course is very limited—been worked out from data supplied by post-mortem investigation, but from a clinical standpoint it has secured considerable attention from Nevins, who very recently read a paper on the “Frequent Association of Heart Disease with Lesions of the Pelvic Viscera in Females” before the Royal Medical and Chirurgical Society of London.

This paper which, as already stated, is based upon the investigation of the clinical history and post-mortem examination of 61 consecutive cases, is written to set forth a humble but earnest and conscientious endeavour to supply, as far as possible, a satisfactory answer to the following four questions:—

I. What proportion of women suffer from organic valvular disease of the heart, and what form of valvular disease is the most frequent?

II. What proportion of women with pelvic lesions suffer from co-existent valvular disease of the heart?

III. What proportion of women with organic valvular disease of the heart suffer from co-existent pelvic lesions?

IV. What are the pelvic lesions which are most frequently found with co-existing heart disease?

*First*, What proportion of women suffer from organic valvular disease? What form of cardiac lesion is the most frequent?

Of the 61 cases examined, 15, or 24·6 per cent., were found to have suffered from valvular heart disease. In 7 of these 15 cases the lesion was situated at the mitral orifice alone. In 5 of them the lesion was also mitral, but associated with concomitant aortic disease. In the remaining 3 the lesion was purely aortic. Therefore 11·4 per cent. of the entire number of cases examined suffered from pure mitral lesions, 8·2 per cent. suffered from mitral with concomitant aortic lesions, and 4·9 per cent. from pure aortic lesions.

The total number of mitral lesions in 61 cases was 12, which gives a percentage of 19·6; of these, 10 cases were cases of mitral stenosis, which gives a percentage of 16·4 for mitral stenosis.

Twelve out of the 15 cases of heart disease already referred to were cases of mitral lesions, which indicates that 80 per cent. of women affected with heart disease suffered from mitral disease. Ten of the 12 were cases of mitral stenosis with or without concomitant aortic disease,—that is to say, 66·6 per cent. of women affected with valvular disease of the heart suffered from mitral stenosis.

*Résumé.*—24·6 per cent. of the cases examined suffered from organic valvular heart disease; 11·4 per cent. suffered from pure mitral lesions; 8·2 per cent. suffered from mitral lesions with concomitant aortic lesions; while 4·9 per cent. suffered from pure aortic lesions. Eighty per cent. of the cases affected with heart disease suffered from mitral disease with or without concomitant



aortic disease; 66·6 per cent. of these cases were cases of mitral stenosis with or without concomitant aortic diseases.

It may be interesting to compare these figures with those in the male.

Of 100 cases examined at the post-mortem theatre of the Edinburgh Royal Infirmary during the first six months of 1889—which is the period during which the above 61 cases were examined—15 of them were found to have suffered from organic valvular disease of the heart; only 3 per cent. suffered from purely mitral lesions, and only 3 per cent. from mitral lesions with concomitant aortic disease, while 9 per cent. were affected with purely aortic disease. Of these 15 cases, 46·6 per cent. were affected with purely aortic disease; 26·6 per cent. of these were mitral stenosis with or without concomitant aortic disease.

Table showing the relative frequency of Valvular Heart Disease in the two sexes, based upon the examination of 100 male and 61 female cases.

|                                                           | Female.<br>Per cent. | Male.<br>Per cent. |
|-----------------------------------------------------------|----------------------|--------------------|
| Valvular heart disease found, . . . . .                   | 24·6                 | 15                 |
| Pure mitral lesions found, . . . . .                      | 11·4                 | 3                  |
| Mitral lesions with concomitant aortic disease, . . . . . | 8·2                  | 3                  |
| Pure aortic lesions found, . . . . .                      | 4·9                  | 9                  |

Table showing the relative frequency of the Valves affected in the cases in which Valvular Lesions were discovered.

|                                                                      | Female.<br>Per cent. | Male.<br>Per cent. |
|----------------------------------------------------------------------|----------------------|--------------------|
| Mitral disease, . . . . .                                            | 80                   | 46·6               |
| Mitral stenosis with or without aortic lesion, . . . . .             | 66·6                 | 26·6               |
| Mitral incompetence with or without aortic lesion, . . . . .         | 13·3                 | 20                 |
| Aortic disease                                                       | 53                   | 86·6               |
| Aortic stenosis                                                      | 26·6                 | 26·6               |
| Aortic incompetence                                                  |                      |                    |
| { with or without }<br>{ mitral disease, }<br>{                    } | 26·6                 | 60                 |

From what has been already stated with regard to the heart, the following conclusions seem to be warranted:—

1. That organic valvular heart disease is more frequent in women than in men.

2. That mitral lesions are met with more frequently, especially mitral stenosis, in the female than in the male.

3. That aortic lesions are comparatively rare in the female, whereas in the male they are by far the most frequent organic cardiac affections.

4. That while in the female mitral stenosis is the most frequent form of organic heart disease, mitral incompetence and aortic lesions being much less frequent; in the male, however, aortic

disease in the form of incompetence is by far and away the most frequent form of organic cardiac trouble, mitral lesions and aortic stenosis being much less frequent.

One of the chief differences of organic valvular heart disease, therefore, in its relation to the two sexes is the great predominance in the female of mitral stenosis, and in the male of aortic incompetence over all other cardiac lesions. The morbid influences which disturb the female heart seem to concentrate themselves around the mitral valve, whereas in the sterner sex they attack the aortic orifice.

*Secondly*, What proportion of women with pelvic lesions suffer from co-existent heart disease ?

In the endeavour to supply, as far as possible, a satisfactory answer to this question, and to give a fair and a complete representation of the conditions met with, the affections of the pelvic viscera have been classified into six sections,—(1) Lesions of the uterus and cervix; (2) Lesions of the ovaries; (3) Lesions of the Fallopian tubes; (4) Lesions of the broad ligaments; (5) Lesions of the external genitals and rectum; (6) Lesions of the pelvic peritoneum and cellular tissue.

The cases have been arranged into a series of tables, a table having been constructed for each section (Tables A). These tables show—(1) The number of cases found affected with each lesion in 61 cases; (2) The percentage of cases affected; (3) The number of cases in which heart disease co-existed with each lesion; (4) The percentage of heart disease discovered.

UTERUS.—TABLE A.

Table showing the number of Uterine Lesions in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease. |                                                     | No. of Cases. | Per- centages. | Cases of Heart Disease. | Per- centages of Heart Disease. |
|----------|-----------------------------------------------------|---------------|----------------|-------------------------|---------------------------------|
| Uterus.  | Perimetritis, . . .                                 | 21            | 34·4           | 5                       | 23·8                            |
|          | Endometritis, . . .                                 | 7             | 11·5           | 4                       | 57                              |
|          | Congestion, . . .                                   | 3             | 4·9            | 2                       | 66                              |
|          | Fibroids, . . .                                     | 6             | 9·8            | 1                       | 16·6                            |
|          | Uterine polypi, . . .                               | 3             | 4·9            | 1                       | 33                              |
|          | Hypertrophy, . . .                                  | 2             | 3·2            | 1                       | 50                              |
|          | Versions, . . .                                     | 7             | 11·5           | 3                       | 43                              |
| Cervix.  | Endocervicitis, . . .                               | 21            | 34·4           | 10                      | 47·6                            |
|          | Lacerations, . . .                                  | 6             | 9·8            | 3                       | 50                              |
|          | True ulceration, . . .                              | 3             | 4·9            | 1                       | 33·3                            |
|          | Eversion of muc. memb. and catarrhal patches, . . . | 9             | 14·7           | 4                       | 44·4                            |
|          | Conical cervix and stenosis, .                      | 3             | 4·9            | 1                       | 33·3                            |
|          | Cervical polypi, . . .                              | 2             | 3·2            | 0                       | 0                               |
|          | Hypertrophy of cervix, .                            | 1             | 1·6            | 0                       | 0                               |

## FALLOPIAN TUBES.—TABLE A.

Table showing the number of Tubal Lesions in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease.                     | No. of Cases. | Per-<br>centages. | Cases of<br>Heart<br>Disease. | Per-<br>centages<br>of Heart<br>Disease. |
|------------------------------|---------------|-------------------|-------------------------------|------------------------------------------|
| Perisalpingitis, . . . .     | 23            | 37·7              | 7                             | 30·4                                     |
| Endosalpingitis, . . . .     | 10            | 16·3              | 3                             | 30                                       |
| Congestion, . . . .          | 7             | 11·5              | 4                             | 57                                       |
| Displacement, . . . .        | 8             | 13·1              | 3                             | 37·5                                     |
| Hydro-salpinx, . . . .       | 7             | 11·5              | 3                             | 43                                       |
| Serous cysts, . . . .        | 8             | 13·1              | 5                             | 62·5                                     |
| Hydatid of Morgagni, . .     | 5             | 8·2               | 1                             | 20                                       |
| Accessory fimbriated ends, . | 2             | 3·2               | 1                             | 50                                       |
| Hæmato-salpinx, . . . .      | 1             | 1·6               | 0                             | 0                                        |
| Cancer, . . . .              | 1             | 1·6               | 0                             | 0                                        |

## OVARIES.—TABLE A.

Table showing the number of Ovarian Lesions in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease.                  | No. of Cases. | Per-<br>centages. | Cases of<br>Heart<br>Disease. | Per-<br>centages<br>of Heart<br>Disease. |
|---------------------------|---------------|-------------------|-------------------------------|------------------------------------------|
| Periovaritis, . . . .     | 18            | 29·5              | 5                             | 27·7                                     |
| Acute ovaritis, . . . .   | 4             | 6·5               | 2                             | 50                                       |
| Chronic ovaritis, . . . . | 8             | 13·1              | 2                             | 25                                       |
| Displacement, . . . .     | 8             | 13·1              | 3                             | 37·5                                     |
| Congestion, . . . .       | 6             | 9·8               | 2                             | 33·3                                     |
| Cystic, . . . .           | 10            | 16·3              | 2                             | 20                                       |
| Dermoid cyst, . . . .     | 1             | 1·6               | 0                             | 0                                        |
| Blood cyst, . . . .       | 1             | 1·6               | 0                             | 0                                        |
| Cancer, . . . .           | 2             | 3·2               | 1                             | 50                                       |

[BROAD LIGAMENTS.—TABLE A.

## BROAD LIGAMENTS.—TABLE A.

Table showing the number of Broad Ligament Lesions in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease.                                                               | No. of Cases. | Per-<br>centages. | Cases of<br>Heart<br>Disease. | Per-<br>centages<br>of Heart<br>Disease |
|------------------------------------------------------------------------|---------------|-------------------|-------------------------------|-----------------------------------------|
| Pedunculated cyst of the tubules<br>of Kobelt, . . . . . }             | 35            | 57.4              | 8                             | 23                                      |
| Sessile cysts of the tubules of<br>Kobelt, . . . . . }                 | 16            | 26.2              | 3                             | 18.7                                    |
| Pedunculated cyst of the ver-<br>tical parovarian tubules, . }         | 4             | 6.5               | 1                             | 25                                      |
| Sessile cysts of ditto, . . . .                                        | 15            | 24.6              | 4                             | 26.6                                    |
| Sessile cysts of broad ligaments,<br>close to the ovarian fimbria, . } | 15            | 24.6              | 3                             | 20                                      |
| Sessile cysts of broad ligaments<br>close to the ovarian fimbria, . }  | 11            | 18                | 3                             | 27.2                                    |
| Pedunculated cyst of the duct<br>of Gartner, . . . . . }               | 10            | 16.3              | 5                             | 50                                      |
| Congestion, . . . . .                                                  | 4             | 6.5               | 2                             | 50                                      |
| Cellulitic thickening, . . . .                                         | 6             | 9.8               | 2                             | 33.3                                    |
| Cancer (secondary), . . . . .                                          | 2             | 3.2               | 1                             | 50                                      |
| Varicosity of pampiniform<br>plexus, . . . . . }                       | 2             | 3.2               | 1                             | 50                                      |
| Phleboliths in ditto, . . . .                                          | 2             | 3.2               | 1                             | 50                                      |

## EXTERNAL GENITALS AND RECTUM.—TABLE A.

Table showing the number of Vulvar Lesions in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease.                       | No. of Cases. | Per-<br>centages. | Cases of<br>Heart<br>Disease. | Per-<br>centages<br>of Heart<br>Disease. |
|--------------------------------|---------------|-------------------|-------------------------------|------------------------------------------|
| Hypertrophy of labia minora, . | 2             | 3.2               | 1                             | 50                                       |
| Urethral caruncles, . . . . .  | 3             | 4.9               | 2                             | 66.6                                     |
| Hæmorrhoids, . . . . .         | 8             | 13.1              | 5                             | 62.5                                     |

## PELVIC PERITONITIS AND CELLULITIS.—TABLE A.

Table showing the number of cases of Peritonitis and Cellulitis in 61 consecutive cases, and the percentages of Heart Disease discovered.

| Disease.                           | No. of Cases. | Per-<br>centages. | Cases of<br>Heart<br>Disease. | Per-<br>centages<br>of Heart<br>Disease. |
|------------------------------------|---------------|-------------------|-------------------------------|------------------------------------------|
| Pelvic peritonitis and cellulitis, | 29            | 47                | 7                             | 24                                       |

*Thirdly*, What proportion of women affected with organic heart disease suffer from co-existent pelvic lesions?



As when dealing with question 2, the affections of the pelvic viscera have been divided into six sections and the cases arranged in tabular form—a table, as before, being constructed for each section (Tables B). These tables show—(1) The number of cases in which pelvic lesions and heart disease co-existed; (2) Total number of cases of heart disease discovered in 61 consecutive cases; (3) Percentage of pelvic lesions discovered.

#### UTERUS.—TABLE B.

Table showing the number of Valvular Heart Diseases in 61 consecutive cases, and the percentages of Uterine Lesions discovered.

| Disease.       |                                                       | Cases of Heart Disease with co-existent Uterine Lesion. | Total Cases of Heart Disease. | Percentages of Uterine Lesions. |
|----------------|-------------------------------------------------------|---------------------------------------------------------|-------------------------------|---------------------------------|
| <i>Uterus.</i> | Perimetritis, . . . .                                 | 5                                                       | 15                            | 33                              |
|                | Endometritis, . . . .                                 | 4                                                       | 15                            | 26·6                            |
|                | Congestion, . . . .                                   | 2                                                       | „                             | 13·3                            |
|                | Fibroids, . . . .                                     | 1                                                       | „                             | 6·6                             |
|                | Uterine polypi, . . . .                               | 1                                                       | „                             | 6·6                             |
|                | Hypertrophy, . . . .                                  | 1                                                       | „                             | 6·6                             |
|                | Versions, . . . .                                     | 2                                                       | „                             | 13·3                            |
| <i>Cervix.</i> | Endocervicitis, . . . .                               | 10                                                      | „                             | 66·6                            |
|                | Lacerations, . . . .                                  | 3                                                       | „                             | 20                              |
|                | True ulceration, . . . .                              | 1                                                       | „                             | 6·6                             |
|                | Eversion of muc. memb. and catarrhal patches, . . . . | 4                                                       | „                             | 26·6                            |
|                | Conical cervix and stenosis, . . . .                  | 1                                                       | „                             | 6·6                             |
|                | Cervical polypi, . . . .                              | 0                                                       | „                             | 0                               |
|                | Hypertrophy of cervix, . . . .                        | 0                                                       | „                             | 0                               |

#### FALLOPIAN TUBES.—TABLE B.

Table showing the number of Valvular Heart Diseases in 61 consecutive cases, and the percentages of Tubal Lesions discovered.

| Disease.                          | Cases of Heart Disease with co-existent Tubal Lesion. | Total Cases of Heart Disease. | Percentages of Tubal Lesion. |
|-----------------------------------|-------------------------------------------------------|-------------------------------|------------------------------|
| Perisalpingitis, . . . .          | 7                                                     | 15                            | 46·6                         |
| Endosalpingitis, . . . .          | 3                                                     | „                             | 20                           |
| Congestion, . . . .               | 4                                                     | „                             | 26·6                         |
| Displacement, . . . .             | 3                                                     | „                             | 20                           |
| Hydro-salpinx, . . . .            | 3                                                     | „                             | 20                           |
| Serous cysts, . . . .             | 5                                                     | „                             | 33                           |
| Hydatid of Morgagni, . . . .      | 1                                                     | „                             | 6·6                          |
| Accessory fimbriated end, . . . . | 1                                                     | „                             | 6·6                          |
| Hæmato-salpinx, . . . .           | 0                                                     | „                             | 0                            |
| Cancer, . . . .                   | 0                                                     | „                             | 0                            |

## OVARIES.—TABLE B.

Table showing the number of Valvular Heart Diseases in 61 consecutive cases, and the percentages of Ovarian Lesions discovered.

| Disease.                  | Cases of Heart Disease with co-existent Ovarian Lesion. | Total Cases of Heart Disease. | Percentages of Ovarian Lesion. |
|---------------------------|---------------------------------------------------------|-------------------------------|--------------------------------|
| Periovaritis, . . . . .   | 5                                                       | 15                            | 33                             |
| Acute ovaritis, . . . . . | 2                                                       | "                             | 13·3                           |
| Chronic " . . . . .       | 2                                                       | "                             | 13·3                           |
| Displacement, . . . . .   | 3                                                       | "                             | 20                             |
| Congestion, . . . . .     | 2                                                       | "                             | 13·3                           |
| Cystic, . . . . .         | 2                                                       | "                             | 13·3                           |
| Dermoid cyst, . . . . .   | 0                                                       | "                             | 0                              |
| Blood cyst, . . . . .     | 0                                                       | "                             | 0                              |
| Cancer, . . . . .         | 1                                                       | "                             | 6·6                            |

## BROAD LIGAMENTS.—TABLE B.

Table showing the number of Valvular Heart Diseases in 61 consecutive cases, and the percentages of Broad Ligament Lesions discovered.

| Disease.                                                             | Cases of Heart Disease with co-existent Broad Ligament Lesions. | Total Cases of Heart Disease. | Percentages of Broad Ligament Lesions. |
|----------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------|----------------------------------------|
| Pedunculated cysts of the tubules of Kobelt, . . . . .               | 8                                                               | 15                            | 53·3                                   |
| Sessile cysts of the tubules of Kobelt, . . . . .                    | 3                                                               | "                             | 20                                     |
| Pedunculated cysts of the vertical parovarian tubules, . . . . .     | 1                                                               | "                             | 6·6                                    |
| Sessile cysts of do., . . . . .                                      | 4                                                               | "                             | 26·6                                   |
| Sessile cysts of broad ligaments, . . . . .                          | 3                                                               | "                             | 20                                     |
| Sessile cysts of broad ligaments close to ovarian fimbria, . . . . . | 11                                                              | "                             | 73·3                                   |
| Pedunculated terminal cyst of the duct of Gartner, . . . . .         | 5                                                               | "                             | 33·3                                   |
| Congestion, . . . . .                                                | 2                                                               | "                             | 13·3                                   |
| Cellulitic thickening, . . . . .                                     | 2                                                               | "                             | 13·3                                   |
| Cancer (secondary), . . . . .                                        | 1                                                               | "                             | 6·6                                    |
| Varicosity of pampiniform plexus, . . . . .                          | 1                                                               | "                             | 6·6                                    |
| Phleboliths in pampiniform plexus, . . . . .                         | 1                                                               | "                             | 6·6                                    |

## EXTERNAL GENITALS AND RECTUM.—TABLE B.

Table showing the number of Valvular Heart Diseases in 61 consecutive cases, and the percentages of Vulvar Lesions discovered.

| Disease                      | Cases of Heart Disease with co-existent Vulvar Lesions. | Total Cases of Heart Disease. | Percentages of Vulvar Lesions. |
|------------------------------|---------------------------------------------------------|-------------------------------|--------------------------------|
| Hypertrophy of labia minora, | 1                                                       | 15                            | 6.6                            |
| Urethral caruncles, . . .    | 2                                                       | „                             | 13.3                           |
| Hæmorrhoids, . . .           | 6                                                       | „                             | 40                             |

## PELVIC PERITONITIS AND CELLULITIS.—TABLE B.

Table showing the number of Valvular Heart Lesions in 61 consecutive cases, and the percentage of Peritonitis and Cellulitis discovered.

| Disease.                                       | Cases of Heart Disease with co-existent Peritonitis and Cellulitis. | Total Cases of Heart Disease. | Percentage of Peritonitis and Cellulitis. |
|------------------------------------------------|---------------------------------------------------------------------|-------------------------------|-------------------------------------------|
| Pelvic peritonitis and cellulitis, . . . . . } | 7                                                                   | 15                            | 46.6                                      |

In the foregoing tables it must here be remarked, that where several pelvic lesions presented themselves it was found necessary to enumerate the same case more than once, as, for instance, a case in which perimetritis existed and also endocervicitis, appears under both these headings, and therefore the aggregate numbers will be found much higher than the total number given.

*Fourthly*, What are the pelvic lesions which are most frequently found with co-existent organic heart disease?

In order to indicate the relative frequency with which pelvic lesions and heart disease co-existed in the 61 cases examined, it has here again been found necessary to have recourse to a tabular arrangement. Table C is a compound of the last column in tables A and B. The figures in these columns corresponding to each heading were added together, the product halved, and the result taken as the average percentage. This number determines the sequence in the table, which indicates not only what pelvic lesions are most frequently co-existent with heart disease, but also the relative frequency with which heart disease co-existed with each.

TABLE C.

Table showing the relative frequency with which Pelvic Lesions and Heart Disease co-existed in 61 consecutive cases expressed in percentages.

| Disease.                                                                                 | Average<br>Percentage of<br>Heart Disease. |
|------------------------------------------------------------------------------------------|--------------------------------------------|
| Endocervicitis, . . . . .                                                                | 57                                         |
| Hæmorrhoids, . . . . .                                                                   | 51.2                                       |
| Sessile cysts of the broad ligaments situated close to the<br>ovarian fimbria, . . . . . | 50.4                                       |
| Sessile cysts in serous covering of the Fallopian tubes, . . . . .                       |                                            |
| Endometritis, . . . . .                                                                  | 47.7                                       |
| Congestion of Fallopian tubes, . . . . .                                                 | 41.8                                       |
| Pedunculated terminal cysts of the duct of Gartner, . . . . .                            | 41.2                                       |
| Urethral caruncles, . . . . .                                                            | 39.9                                       |
| Congestion of the uterus, . . . . .                                                      | 39.6                                       |
| Perisalpingitis, . . . . .                                                               | 38.5                                       |
| Pedunculated cysts of the tubules of Kobelt, . . . . .                                   | 38                                         |
| Pelvic peritonitis and cellulitis, . . . . .                                             | 35.8                                       |
| Eversion of the muc. memb. of cervix and catarrhal<br>patches, . . . . .                 | 35.5                                       |
| Laceration of the cervix, . . . . .                                                      |                                            |
| Acute ovaritis, . . . . .                                                                | 35                                         |
| Hydro-salpinx, . . . . .                                                                 | 31.6                                       |
| Congestion of the broad ligaments, . . . . .                                             | 31.5                                       |
| Periovaritis, . . . . .                                                                  | 31.6                                       |
| Displacement of the tubes and ovaries, . . . . .                                         | 30.3                                       |
| Perimetritis, . . . . .                                                                  | 28.7                                       |
| Cancer of the ovaries, . . . . .                                                         | 28.4                                       |
| Accessory fimbriated ends of Fallopian tubes, . . . . .                                  | 28.3                                       |
| Cancer of broad ligaments, . . . . .                                                     | 28.3                                       |
| Hypertrophy of the uterus, . . . . .                                                     | 28.3                                       |
| Varicosity of, and phleboliths in pampiniform plexus, . . . . .                          | 28.3                                       |
| Versions of the uterus, . . . . .                                                        | 28.1                                       |
| Hypertrophy of the labia minora, . . . . .                                               | 28                                         |
| Sessile cysts of vertical parovarian tubules, . . . . .                                  | 26.6                                       |
| Endosalpingitis, . . . . .                                                               | 25                                         |
| Congestion of the ovaries, . . . . .                                                     | 23.3                                       |
| Cellulitic thickening of broad ligaments, . . . . .                                      | 23.3                                       |
| Cystic disease of the ovaries, . . . . .                                                 | 21.6                                       |
| Sessile cysts of the broad ligaments, . . . . .                                          | 20                                         |
| Conical cervix and stenosis, . . . . .                                                   | 19.9                                       |
| True ulceration of cervix, . . . . .                                                     | 19.9                                       |
| Uterine polypi, . . . . .                                                                | 19.8                                       |
| Sessile cysts of the tubules of Kobelt, . . . . .                                        | 19.3                                       |
| Chronic ovaritis, . . . . .                                                              | 19.1                                       |
| Pedunculated cysts of the vertical parovarian tubules, . . . . .                         | 15.8                                       |
| Hydatids of Morgagni, . . . . .                                                          | 13.3                                       |
| Uterine fibroids, . . . . .                                                              | 11.8                                       |



A glance at the foregoing tables readily shows that the most frequent pelvic lesions met with, excepting the small pedunculated cysts which hang from the tubules of Kobelt on the anterior layer of the mesosalpinx, and which are never large, and vary in size from a pea to that of a bean, are pelvic peritonitis and cellulitis and catarrh of the cervix. Whenever adhesions, however delicate, were noticed passing from one pelvic organ to one or more of the neighbouring organs, the case was always called one of pelvic peritonitis. Perimetritis and perisalpingitis occurred more frequently than periovaritis; the former had a percentage of 34 and 37 respectively, while the latter had a percentage of 29.

In Table C., where the pelvic lesions are classified according to the relative frequency with which heart disease co-existed, the foremost position is occupied by endocervicitis. With the exception of the broad ligament and parovarian cysts, the majority of which were small, two only reaching the size of an orange, the next most frequent affections in which heart disease co-existed are the congestive and inflammatory lesions of the uterus, Fallopian tubes, and ovaries. This seems to indicate that heart disease is more closely associated with these than with the other lesions. I have, however, refrained from drawing any conclusions as to the ætiological relation of organic heart disease and pelvic lesions, which I leave to those who have greater experience and are better able, my object being more to give a conscientious record of the conditions met with than to draw hasty conclusions, as the cases are too few to attribute any ætiological value to either.

The co-existence of heart disease and pelvic disorders in women has long been recognised by physicians. The late Dr Hilton Fagge, in his text-book on *The Principles and Practice of Medicine* (vol. i., 2nd edition, 1888), remarks that Dr Pott found, from the analysis of the records of Guy's Hospital, that sclerotic endocarditis, as it affects the mitral valve and leads to stenosis of the left auriculo-ventricular opening, is frequently associated in women with uterine disorders. He also states that mitral stenosis is much more frequent in women than in men (p. 954).

In the *Lancet* (vol. i., 1884, p. 1068) the late Dr Milner-Fothergill also refers to the frequency with which functional cardiac disorders are found associated with pelvic lesions in the female.

With regard to the menstrual history of the 15 cases which presented organic cardiac lesions, two of them suffered from menorrhagia, in six the flow was scanty and short in duration, in four it was normal, while in the remaining three there was no reference to the menstrual history in the Hospital records. As to the question whether the pelvic lesions preceded those of the heart, it may be stated that nine out of the fifteen were admitted with evident symptoms of heart disease, from which they had suffered more or less for several months, and in some cases for several years. In two out of the nine the patients had been under treatment for heart disease at the Hospital many years before.

## VII.—NOTE ON THE MEASUREMENTS OF THE FŒTAL HEAD.

By G. ERNEST HERMAN, M.B. Lond., F.R.C.P., Obstetric Physician to the London Hospital, etc.

A VALUABLE paper by Dr J. W. Ballantyne, "On the Head of the Infant at Birth," appeared in the *Edinburgh Medical Journal* for August 1890. In that paper, among other points, he draws attention to some errors and defects in the measurements of the fœtal head which are given in most of the text-books on Midwifery. In this note I wish to bring forward additional evidence of the correctness of one of Dr Ballantyne's statements, and to comment on some other measurements.

1. Dr Ballantyne shows that the occipito-mental diameter of the head is not the longest, but that, as had been pointed out by Budin and also by Galabin, the maximum diameter is one from the chin to a point in front of the posterior fontanelle. This measurement Dr Ballantyne finds to average  $5\frac{1}{2}$  inches; Galabin gives it as 5 inches; Budin as 12.9 cm. ( $5\frac{1}{4}$  inches). I asked Dr Harold Low, House Physician to the General Lying-in Hospital, to measure for me twenty fœtal heads of full-term children, to ascertain this and the other points on which I shall remark. The average weight of the children whose heads were measured was  $7\frac{1}{2}$  lbs. The measurements were all taken on the first day, as soon after birth as possible. The *maximum* diameter was found to average  $5\frac{1}{4}$  inches, and was one from the chin to a variable point situated in the posterior quarter of the sagittal suture, its precise situation being dependent, as Galabin has pointed out, on the moulding of the head.

2. The *sub-occipito-bregmatic* diameter is given in most text-books, and has been measured with care. Dr Ballantyne gives it as  $4\frac{1}{8}$  inches. It appears to me that this is a measurement of little or no obstetrical importance, and that students' memories need not be burdened with it. I presume that it has been taken as indicating the maximum diameter which stretches the vulval orifice when the head is delivered with the occiput forwards. But it is not so. The maximum diameter which stretches the vulval orifice is one from the junction of the neck with the occiput to the most distant point of the frontal suture. The precise situation of this point depends upon the moulding of the head. Dr Low has measured this diameter—the *sub-occipito-frontal*—and finds it average  $4\frac{1}{4}$  inches. It is this sub-occipito-frontal diameter which is really important from an obstetrical point of view; and in the enumeration of the principal diameters of the head I think it should replace the sub-occipito-bregmatic.

3. Another measurement usually given is the *cervico-bregmatic*. In face presentations, with the chin in front, the cervico-bregmatic diameter takes the place of the sub-occipito-bregmatic in occipito-

anterior deliveries. But it is not the maximum diameter which stretches the vulval orifice, and therefore is, like the sub-occipito-bregmatic, unimportant. It should be replaced by the *cervico-vertical*, which is the diameter that stretches the perineum in chin anterior face deliveries. This measurement is from the junction of the neck with the head in front to the most distant point of the sagittal suture. The precise situation of this point depends upon the moulding of the head. Dr Low found it average  $4\frac{7}{8}$  inches. It is a difficult measurement to make, because the point of the callipers so easily presses up and in the soft parts at the junction of the neck and head. Dr Low overcame this by holding the point of the callipers with his thumb and finger, so that the same pressure which the calliper-point exerted was distributed by the thumb and forefinger over the whole breadth of the neck. The fact that the cervico-vertical measurement is longer than the sub-occipito-frontal is one reason for the greater length of labours with the face presenting.

### VIII.—SEQUEL TO A CASE OF OVARIOTOMY.

By WILLIAM TAYLOR, M.D., F.R.C.P.E.

#### PATHOLOGICAL REPORT.

By WILLIAM RUSSELL, M.D., F.R.C.P.E., Pathologist to the Royal Infirmary, Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh, 4th June 1890.*)

TEN years ago I was walking towards the west end of Queen Street in company with a medical friend. He was discoursing with all the fervour of an enthusiast on a recent series of successful ovariotomies performed by him. He informed me that in several of these cases he had made use of a double silk ligature, by means of which he strangulated the pedicle. He then severed it, and, removing the ovary, allowed the ligatured portion to drop back into its place in the abdomen. In my innocence I inquired what became of the ligature? His reply was,—“*God knows. It never gives me any trouble.*”

This answer startled me. It was not satisfactory to my old-fashioned mind. I was haunted with the idea of these ligatures remaining in the abdomen, where they might become centres of mischievous irritation, and I naturally desired to become possessed of the knowledge which the ovariotomist contemned. The career of the ligature, after its primary object was accomplished, although involved in obscurity, seemed a legitimate subject of inquiry, and I kept on searching for more light. In this quest the rays of reason alone were insufficient until blended with those of observation and pathology, and time was required to gather them into a focus. Meantime the ever-recurring question, What became of the

ligature? presented itself in varying phases, of which the following may serve as examples:—

1st, Did the ligature drop away through an avenue of pus, after its term of usefulness had expired, in the same way as the ligature used in the deligation of an artery finds its way to the surface?

2nd, If so, what became of the pus so imprisoned and the ligature so liberated in the abdomen?

3rd, Did the ligature remain *in situ*, entailing months or years of detriment undefined and undefinable, but such as must always attend the presence of a foreign body within the tissues of the body—the presence of matter in a wrong place?

4th, Did the ligature and its attendant products of pus and other disintegrated matter undergo solution, digestion, and absorption into the system?

5th, If so, the pabulum would seem to be most unsuitable; but even if suitable, what became of the effete residuum which is attendant upon all processes of digestion? Did it also enter the circulation in a state of decomposition but non-assimilation, and was it carried onwards mechanically by the blood-current until it became deposited in some nook or eddy of lung or liver or kidney, where it set up business on its own account, and proceeded to disseminate and propagate amongst the surrounding tissues?

Whilst these problems were floating in my mind, I was consulted by a patient from England who had suffered for three years from menorrhagia. I treated her for two periods, but failed to stem the periodic flood. I consulted my friend the ovariologist. After reviewing the treatment and its results, he at once recommended deligation of both ovaries as the only treatment likely to succeed.

This was agreed to. The operation was performed. Both ovaries were healthy; both were removed, and the ligatured pedicles were dropped back into the abdomen. The patient recovered from the operation. Nine years have since elapsed; no return of the menorrhagia has occurred, but she is still an invalid. She has never resumed work. Her intended marriage was broken off in consequence of the mutilation she had undergone, and thus possibly the real cure of her misery has been withheld. Meantime she remains ill, and but for the contingency of an opportune legacy she would be poor indeed. The question naturally arises, Have the embedded ligatures anything to do with this continued ill-health?

More recently (1883) a very instructive case came within my observation. A patient from abroad came under my care. She had a left ovarian tumour of considerable size. I consulted my friend, and he decided to remove it. This was accomplished at Christmas. The stump was carefully cauterized, and returned to the abdomen. He then examined the right ovary, and found it healthy. He was in an operating humour. He examined it a second time, and said that, in order to make sure that it should



not be the site of future disease, he would remove it. He applied a double silk ligature, removed the ovary, and allowed the ligatured stump to drop back into the abdomen. The patient's recovery was tardy at first, owing to her intolerance of morphia, which was injected in routine fashion. This routine was so obviously injurious that I protested against it, and on its being discontinued she made a steady recovery.

For six months she made little effort. Thereafter she became more active, and took outdoor exercise. She complained of nothing except occasional rheumatic pains, which were met by constitutional treatment.

Three years after the operation she suffered from a copious and offensive uterine discharge. This resisted all the ordinary treatment. All the parts within reach of observation were healthy. Ovarian disturbance could not account for it, for there were no ovaries. Still the discharge continued. Obviously the discharge proceeded from the site of the ligature, and found an exit through the still patent fragment of the Fallopian tube. Nothing was therefore done in the way of treatment beyond such an amount of warm douching as was required for cleanliness and comfort. The discharge continued steadily for months, varying in amount, but never absent; then it stopped for a few days; again it recommenced, and continued for varying periods; and so on for two years, when it finally ceased, and was followed by pain in the back. This interfered very much with active exertion, and gave rise to a constant feeling of weariness and lassitude. The uterine discharge never returned.

Shortly after Christmas 1888, five years after the operation, she returned from a visit to the country complaining of numbness of the right foot and leg. On examination, I found the foot and leg swollen, the sensibility greatly diminished, and the surface temperature of the foot reduced 3 degrees below that of the corresponding foot. The œdema extended to the thigh; but the sensibility and temperature increased from the ankle upwards, and were normal at the groin.

The dorsum of the foot presented two blanched bloodless patches of irregular shape, and measuring respectively  $1\frac{3}{4}$  and  $2\frac{1}{2}$  inches in diameter. These were completely insensible to the touch, and suggested approaching gangrene. The appearance of the whole limb indicated some very serious intra-pelvic obstruction to the circulation.

*Could this be at the site of the ligature? and could the patent Fallopian remnant which had afforded an outlet through the uterus have become occluded, leading to an accumulation within and giving rise to an abscess, the presence and pressure of which was thus retarding the circulation?*

These were the natural questions suggested to my mind. The great question, however, was how to get the patient well again,

and with this view I enjoined absolute rest in the recumbent position and warmth. This was accomplished by having the limb enveloped in a great thickness of carded sheep's wool, with the addition of hot bottles; and by these means the foot and leg gradually recovered, until at the end of fourteen days they had regained their normal appearance, and thereafter the surface temperature of the foot rose to one degree higher than that of the corresponding foot.

The patient was able gradually to resume her ordinary duties, but complained of pain in the back, which was somewhat intermittent in character, but she never felt well. In the following July she went to the country, and there she complained of an obstinate diarrhoea. Her diet, which had been unrestricted, was gradually altered, until finally reduced to milk and lime-water. On this she seemed to thrive, but the pain in her back increased, and became continuous. It had also changed its position from the left to the right side, and extended round towards the front. On her return to town in September I examined her, and found a large tumour occupying the right side, and extending from the liver, with which it seemed continuous, down into the right iliac space. The outer two-thirds were dull and palpable, the inner third resonant with the overlapping colon, and where this terminated a hard elbow-like projection could be felt. The manipulation of the tumour was unattended with pain.

The motions from the bowels were soft and clay-coloured, the urine dark and scanty. Rest was tranquil, and the intellectual powers unimpaired. The breathing was interrupted by occasional sighs, and savoured somewhat of pyæmia. The feet and ankles presented no appearance of œdema. The existence of very serious malignant disease was manifest; and Dr Wyllie, who concurred in this view, kindly assisted me with the further treatment of the case. This consisted chiefly of palliatives, rest, and warmth, with the promotion of gentle action of the skin and bowels. Operative procedure was inadmissible. Ten days after her return to town the kidneys refused to act, and there was no urine passed during the remaining ten days of her life. On the fifteenth day the motions suddenly changed in colour to an olive-black, and became very loose, copious, and frequent for thirty hours. Thereafter the hard knuckle at the edge of the liver could no longer be felt, and for a time she seemed to rally. Behind the uterus there was a hard mass, to which it was adherent; and Dr Wyllie suggested that a gynecologist should make an examination, in order to ascertain whether, in the event of the ureters being involved and blocked in this way, operative procedure could be entertained. Dr Berry Hart kindly made the proposed examination, and found the broad ligament adherent on the right side, and the condition already described, but could offer no hope from an operation.

She gradually sank, and died on the morning of the twenty-

second day. A post-mortem examination was conducted in due course by Dr Russell, and I will leave him to describe what he found. I asked him to pay special attention to the site of the ligature, and he examined it with great care. He also examined the part where the hard, bony-like projection had been felt. It was the site of the gall-bladder.

#### PATHOLOGICAL REPORT.

Owing to the operation which had been performed, attention was first directed to the uterus and its appendages. The pedicle on the left side presented no signs of prolonged irritation, there being, in fact, a marked absence of thickening either in or around it. The right pedicle had, on the other hand, been the seat of much and prolonged irritation, the evidence of this being found in the presence of dense fibrous adhesions in its neighbourhood, especially posteriorly, where the pedicle was incorporated with the parts in front of the sacrum and adjoining pelvis. On the uterine side of what looked like the seat of ligature there was a four-chambered cyst about the size of a small walnut, which contained purulent-looking material. The bladder and parts in front of the uterus appeared normal, but behind the uterus, and in the pelvis round the rectum, there was much fibroid induration and thickening, the thickening extending to and involving the walls of the rectum. This condition, extending upwards along the connective tissues in front of the spine, produced a like thickening and induration in them; and in it both ureters were embedded, the left being so surrounded by this new tissue as to lead to its complete blocking, while the right was not so completely blocked. The left ureter was not only blocked and surrounded by this fibroid growth, but its wall evidently shared in the process, and was itself thickened. The process extended from the tissues immediately in front of the spine to the pancreas, the head of which it surrounded, and partially, at least, penetrated. Laterally it extended to, surrounded, and involved the suprarenal capsules to such an extreme degree that the left capsule could not be recognised in the indurated tissue occupying its normal site. In addition to this somewhat diffuse condition there was, in the great omentum, a scar-like puckering and a hard nodule under an inch in diameter. The mesentery was thickened somewhat generally, and at one part it contained a calcareous mass, presumably a gland. At the cæcum there was an area where the mesentery was the seat of a localized induration, accompanied with marked puckering of the part, but not causing obstruction. The left kidney, from the blocking of its ureter, presented the ordinary appearances of advanced hydronephrosis. The right kidney showed slight distension of its pelvis and calyces—the organ itself being large, swollen, cloudy, and somewhat fatty. The liver contained

a considerable number of small whitish malignant nodules about the size of a sixpenny-piece in circumference.

Microscopical examination showed the new tissue to be mainly fibrous in character, but in it at the parts examined—as, for example, round the left ureter and the nodule in the omentum—there was an adenomatous structure, suggesting, and in parts closely resembling, proliferous cystadenoma of the ovary. In the liver the structure of the nodules was more that of an ordinary carcinoma.

The case, from a morbid anatomy standpoint, offers various points for discussion, which will probably be dealt with at some future time when the wider questions involved are considered. Meanwhile the opinion may be expressed, that the irritation round the ligature appeared to be the starting-point of an irritation which acquired, if it did not originally possess, malignant characters, and led to the condition briefly sketched in this report.

*Edin. Med. Jour.*

## Part Second.

### REVIEWS.

*The Medical and Surgical History of the War of the Rebellion.* Part III., Vol. I.—*Medical History.* Being the Third Medical Volume. Prepared under the direction of the Surgeon-General, United States Army, by CHARLES SMART, Major and Surgeon, United States Army. Pp. xiii. and 974, and Index; 81 Illustrations and 58 Statistical Tables. Washington: Government Printing Office.

THIS wonderful volume is the third part of the medical and surgical history of the War of the Rebellion. The first part was published in 1870, and consisted of a consolidation by departments and regions of the monthly reports of sick and wounded of the various regimental organizations, with extracts from special reports of medical officers, giving a view from the medical standpoint of the movements of the contending forces. The second part, published in 1879, was devoted to a thorough discussion of alvine fluxes based on the materials, documentary and anatomical, collected by the medical officers during the war. Surgeon J. J. Woodward, who had hitherto compiled the work, unfortunately died, and the preparation of this third part of the work was entrusted to the author of the present volume, but it has fallen into extremely able and worthy hands. The author and the Government of the United States are both to be congratulated upon having added to medical literature a magnificent volume, which is a verit-



able treasure-house of information, and a generous and practical tribute to the value of the work done by the medical staff during the war, and which makes us wish that similar recognition were given to army medical men in this country by our Government.

The volume is divided into twelve chapters, each containing numerous sections. The first chapter deals with the medical statistics of the war, upon which the greatest care has been expended, and the generalizations are exemplified by copious tables and diagrams, which give at a glance a graphic survey of the sickness and mortality among the troops and the prevalence of the various diseases from which they suffered, as well as the rate of mortality to be attributed to the same.

The second chapter is introductory to the presentation of the camp fevers. Here we have explained the classification which was used in reporting fevers in the commencement of the war, and certain changes which took place in the classification during its progress. The first change involved was the disuse of the common term *continued fever*, and the second, perhaps the most important, the introduction of the term *typho-malarial* into the reports. There is no doubt that these two changes have served considerably to complicate matters, as, for a considerable time at least, the various medical officers were unable to know what terms to use. Chapter III. deals with the paroxysmal fevers, and with the statistics, the clinical records, the symptomatology, the post-mortem records, and pathology of malarial diseases, as well as their causation, prevention, and treatment. This section occupies 123 pages. With regard to the causation of malarial disease, the author apparently comes to the conclusion that the essential of malarial disease is "a specific germ," which will be eventually, if it has not been already, identified. With regard to the prevention of malarial disease, the author summarizes in a few paragraphs the ordinary precautions, as to choice of site, exposure, etc.; but he goes much more fully into the prophylactic action of quinine, and although in many cases, owing either to the want of the drug or other circumstances, its prophylactic use could not be prolonged, he apparently considers that a sufficient dose, namely, 3 or 4 grains per diem, will act as a prophylactic; but he does not fail to point out that, where the drug is thus used for long periods, the system acquires a tolerance of its action, in consequence of which its power as a remedy becomes lost. The only other two drugs which he mentions as having been of any service were the bark of the willow, of which a spirituous infusion was used with doubtful success, and the *Cornus florida*, or dog-wood, which was more successful. With regard to the treatment of the disease, quinine and arsenic seem to have been the main drugs used. The whole of this chapter is an exceedingly valuable monograph on the subject.

Chapter IV., on the continued fevers, occupies 361 pages, and is divided into sections in the same way as the previous chapter. It

summarizes the results obtained from an examination of 151,384 cases, with a mortality of 33,801. It is impossible in the space at our command to review this clearly-written and instructive chapter in detail, but we must not fail to mention that it is splendidly illustrated with temperature charts, statistical tables (in which, by the way, as all through the volume, the white and coloured troops are kept separate), photographs and lithographs, and woodcuts of pathological specimens.

Chapter V. treats of the diseases allied to or associated with paroxysmal and continued fevers, dealing with cerebro-spinal fever very fully (and giving a number of extremely interesting clinical reports), and very briefly with pneumonic fever, diarrhoea, dysentery, and scurvy—these diseases being compressed into 11 pages. With regard to scurvy, it is interesting to notice that Dr Smart says,—“It is allowed that a scorbutic taint existed at times in many regiments, and that its influence in increasing the danger of typhoid and malarial fevers was felt in individual cases, but the facts do not appear to authorize the establishment of a class of fevers in which the scorbutic element was predominant.” This remarkable absence of scorbutic complications of continued fevers requires notice, because the occurrence of scurvy has been too prominently brought forward in the medical literature of the war hitherto published. In the diagrams showing the prevalence of scurvy during the war it will be remarked that there were only four slight outbreaks amongst the United States white troops, and three amongst the coloured troops, one severe one occurring in August 1866, to which we will refer subsequently.

Chapter VI. deals with the eruptive fevers—small-pox, measles, scarlet fever, and erysipelas. With regard to small-pox, we can only mention that untoward results were attained by attempted vaccination. The details of many cases are given, which show that it frequently caused severe ulceration or gangrene; thus at Chancellorsville, in May 1863, 5000 men were unfit for duty because of disability arising from vaccination. Dr Smart is of the opinion that these anomalous results were caused firstly and chiefly by impure virus, and, secondly, by a deteriorated system; and he points to the necessity of obtaining pure lymph, and the vaccination or revaccination of the men at the time of their enlistment, thus preventing the necessity of vaccinating men prostrated by over-fatigue, exposure, mental depression, or antecedent disease. A good number of cases of measles occurred—67,763 cases, with a mortality of 4246; but probably only a small part of this mortality is referable to the disease. There were only 696 cases of scarlet fever, with 72 deaths. With regard to erysipelas, comparatively little information is given.

Chapter VII. deals with mumps and yellow fever. With regard to mumps, it is curious to notice that during the first year of the war 40 cases were reported amongst every thousand men.

The armies escaped epidemics of yellow fever of exotic origin, so that all we need say about it is that some of the reports on treatment and on the good results of quarantine are valuable.

Chapter VIII. deals with scurvy. During the 18 years before the war, the average annual rate of cases under the heading *scorbutus* was 26·3 per thousand of strength, or nearly twice as large as that which prevailed among the white troops during the years of the war. The statistics show that 30,740 cases of scurvy were reported, but Dr Smart thinks that this number was due to the fact that the medical officers were on the alert for the disease, and states from his own experience, that on the first alarm of scurvy in the ranks many cases which would otherwise have been returned as diarrhoea or rheumatism appear in the reports as veritable scurvy. Later on he says, "On reviewing the history of scurvy in our armies, it is seen that, excluding a few local outbreaks, the troops were kept free from outward manifestations of the cachexia," and he thinks that the general opinion that scurvy occupied a prominent position amongst army diseases was due to the "frequency of cases at the northern depôts, and the generally scorbutic condition of our own paroled or exchanged men, rather than to the actual presence of the disease among our troops in the field and garrison." The pathology, causation, and treatment of scurvy is rapidly summarized, and a hint is given that if scurvy is caused by a deficiency of potash or by a change in the blood from want of alkaline salts, "soldiers in the field may readily extract materials from the *ashes of their camp fires* to supplement a defective diet."

In Chapter IX. we have a dissertation on diseases attributed to non-miasmatic exposures. Thus the diseases of the respiratory organs are dealt with, and a few pages are devoted to congestion and inflammation of the spinal membranes, ophthalmia, and sun-stroke. In regard to the diseases of the respiratory organs, we have only space to make a short reference to pneumonia, which occupies the principal space. Many diseases were of more frequent occurrence than pneumonia, but a higher mortality was only given by diarrhoea and dysentery and the continued fevers. Thus in the white troops 61,202 cases occurred, with 14,738 deaths. The clinical records are very numerous, and well worth careful examination. Dr Smart apparently considers that primary and uncomplicated cases of pneumonia are caused by "a miasm," which operates like other miasms in deteriorating the blood without producing as they do specific lesions in other parts of the system—in fact, a pneumonic miasm. His treatment of the pathology of pneumonia is extremely well delineated. Dr Smart, in referring to acute rheumatism, does not think that the statistics which are given of it lead to the conclusion that it must have been of frequent occurrence amongst the troops, for he thinks that the mortality given proves that many of the cases put down as acute rheumatism were really lumbago, pleurodynia, etc.

We must pass over Chapters X. and XI., merely mentioning that they deal for the most part with very short remarks upon cardiac diseases, morbid conditions attributed to the weight of the accoutrements, hernia, jaundice, alcoholism, etc.

The last chapter in this volume is a very valuable one on general hospitals, and it is illustrated by numerous plans and details of the greatest value, and concludes with a detailed list of all the hospitals, the number of beds, and the names of the medical officers in charge. In it will also be found an interesting tabular statement of the quantity of certain of the supplies purchased and manufactured during the war by the medical department of the army.

It has of necessity been impossible to call attention in any great detail to the immense value of this volume, but we think we have said enough to indicate its scope, and to commend it to the earnest attention of the profession.

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*Du Rôle Physiologique et Thérapeutique de l'Azote Gazeux, considéré principalement dans les eaux minérales des Pyrénées.* Par le Docteur E. DUHOURCAU (de Caunterets). Edouard Privat, Toulouse.

*On the Physiological and Therapeutic part enacted by Nitrogen Gas, considered principally in the Mineral Waters of the Pyrenees.*  
By Dr E. DUHOURCAU.

THE views that have prevailed for long as to the inertness of nitrogen, acting principally as a diluent of atmospheric oxygen, notwithstanding the vigour and efficacy of its combinations, will now require considerable modification in consequence of the labours of the indefatigable author, and talented, erudite, medical consultant of Caunterets, and those of his scientific co-operators in France and Spain. The latter have especially recognised the importance of this gas in the hydrology of their own country, designating the springs of Panticosa and Urberuaga as nitrogenized waters, which Armis and Ferrer, Salazar and Negro, were among the first to disclose at the discussions of the Hydrological Society in 1877 and 1882. There the juniors were very sceptical as to the efficacy of this gas, but the majority of the old doctors, instructed by experience, believed that a body which mainly forms such energetic medicaments as nitric and nitrous acids, cyanogen, and ammonia, could not be indifferent; that it enters largely into the organic elements, while the absence of it in alimentation hurts nutrition and engenders serious maladies. This gas circulating with the blood, moreover, and by endosmotic and exosmotic changes, influences powerfully the different conditions of the organization. After this matter was discussed at the Medical Congress of Seville, Biarritz, and Paris, and it was seen



how much of the curative efficacy of the Cauterets waters was due to the azote, which Sestchenoff taught us was absorbed in ten times greater volume by the blood than by pure water, and which Cailletet has managed to liquefy and solidify,—the applications of it became greatly extended. At Madrid, for example, Sr. Avilès has instituted an establishment of artificial azotized water, the beneficial effects of which have been cited by Drs Pulido, Espina, Cupo, etc. M. Berthelot (Collège de France), in a series of experiments, proved that nitrogen is capable of uniting directly with certain organic substances, especially when modified by electricity, even in such feeble tensions as daily occur in the atmosphere. Following the researches of Dr B. Rubio of Barcelona, carried on in the Municipal Laboratory under Dr Ferrán, the influence of azote on low vegetable organization is clearly displayed, as also in the microbiology of certain maladies,—phthisis, for example,—the augmentation of resisting power of the tissue medium to the activity of the microbe.

“It is intelligible that after pages consecrated to establish the curative influence of azote, I should proceed to an enumeration of the therapeutic virtues of this gas. It is above all employed in inhalations; it is obvious that in laryngo-bronchial affections, in diseases of the respiratory tracts, it should thus render signal services. It is needless to state how it improves naso-pharyngeal catarrhs, ozæna, angina, laryngitis, as also it operates on old bronchitis, in emphysema and asthma, in whooping-cough and nervous coughs it also procures much improvement. The azotized sulphurous waters of the Pyrenees have all made their mark in such cases, as also the natural and artificial nitrogenized waters of Spain.”

Whether absorbed in draughts or utilized in baths, azote operates most beneficially in digestive and urinary maladies. In general diseases, such as anæmia, chlorosis, neurasthenia, experience shows forcibly the benefits derivable from this treatment. In Germany, Mermagen and Tieffermann have cited the improvement obtained directly from the absorption of nitrogen in the suppression of nocturnal perspiration, diminution of diarrhœa, augmentation of appetite, and consequently of nutrition. Dr F. Valenzuela of Madrid has ascertained from the action of the gas in question that the interstitial nourishment is elevated, as shown by the increase of weight among his patients, from 300 to 1500 grammes, explaining to him thereby the anti-febrile sedative and reconstituent action of azote.

In this tractate, as in all other products of Dr Duhourcau's pen, we recognise a remarkable lucidity of style and fulness of matter, which makes the perusal of them equally pleasing and profitable.

*Dental Surgery: a Manual for Students and Practitioners.* By HENRY SEWILL, M.R.C.S., L.D.S. (Eng.) Third Edition. London: Baillière, Tindall, & Cox: 1890.

HAD the following notice appeared in the pages of a dental journal the work under review might have been dwelt upon at much greater length; if, however, what has here to be said of it be brief, it is at all events in almost every way favourable. Perhaps there is no other system of organs in the animal body which has attracted so many commentators of varied knowledge and capabilities, and so many special practitioners of one status or another, as that of the teeth. It is not therefore surprising that among such a host of inquirers as have thus been conjured up some considerable discrepancy of opinion with a little crudity of ideas should prevail upon questions of pathology and treatment. One feels almost sorry to discard the cherished notions of a mellowed but bygone morbid anatomy which would deny any vital action in the progress of dental caries, and maintain the venerable belief that teeth affected by this disease are simply *rotten*. This is a matter which, however, may safely be left in the hands of the modern pathologists, who will probably modify the author's view, that "neither pathological action nor vital reaction of any kind" is manifested by the tissues concerned in dental caries. A very fair epitome, however, of the whole subject of dental surgery is to be found in this manual, and the manner in which the book has been got up, whether as regards letterpress or illustrations, is unexceptionable. It ought to find a place in the library of every dentist.

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*The Care of the Skin in Health and Disease.* By F. AUGUSTUS COX, M.B. Lond., Physician to the Western Skin Hospital. London: Alexander & Shephard: 1890.

IN this age of toilet soaps and cosmetics, some guide may be necessary to point out how the skin ought to be treated. This little work by Mr Cox professes to be such an instructor, and contains a somewhat sketchy account of the hygiene of the integument. There is nothing in it which has not been as well, if not better, said many times before.

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*Baths and Bathing; a Book for Everybody.* By JOSEPH FARRER, M.D. Fourth Edition. Bristol: John Wright & Co.: 1890.

WE have rarely read a more practical book on the subject of baths and bathing than the excellently got up little volume before us. It is called a book for everybody, and certainly we can fully endorse its claim to general circulation. Dr Farrer is thoroughly conversant with his subject, and his experience gives weight to

what he writes in a clear and interesting style. He tells us when to bathe, how to bathe, and when not to bathe; and we would especially recommend a careful perusal of what he has to say about the use and abuse of cold baths. The author says it is a mistake for people to think that it is harmful to bathe in cold water when perspiring and hot; this does no harm, it is the waiting to get cool first of all that harms. Take your plunge into the cold water at once, come out soon, get a good reaction, and then take your rest. There is much sound advice contained in small compass, and we heartily recommend the book to all.

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*Hygiene and Public Health.* By LOUIS C. PARKES, M.D. Second Edition. London: H. K. Lewis: 1890.

THE appearance of a second edition of this excellent book so soon after the publication of the first edition is ample testimony to its merits and of the esteem in which it is held by all engaged in the study of public health. We can only repeat our opinion, recently expressed, that it is a book supplying a want and forming an admirable elementary text-book.

Some new matter has been added; among other things, a table of weights and measures.

We wish this edition every success, and trust that it may be followed by many others.

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*Sewage Disposal Works.* By W. SANTO CRIMP. London: Charles Griffin & Co.: 1890.

THIS is probably the most complete and best treatise on the subject which has been published in our language, and we not only congratulate the author on the very full and comprehensive way in which he has treated his subject, but also must give a word of praise to the publishers for the way in which the volume has been issued. The general construction, the drawings, and type are all excellent, and will help to make the book a standard one, which will prove of the greatest use to all those who have the problem of sewage disposal to face.

There is probably no question affecting the general sanitary condition of the country of equal importance to that of sewage disposal. Many circumstances combine to effect this, and are daily causing the subject to assume greater importance, and at the same time throwing more and more difficulties in the path of its solution. The rapid and unexampled growth of our cities throughout the empire, the advance of science in the knowledge of the conditions affecting the health of communities, tend rather to increase than diminish the obstacles in the way of the sanitary engineer; and last, but not least, the question of expense in many

cases raises a barrier which requires all the energy and skill of enlightened sanitarians to surmount.

As a result of a perusal of Mr Crimp's volume, the reader will be convinced of one rather discouraging fact, viz., that notwithstanding all the attention which has been devoted to the disposal of sewage during the last twenty years, we are still far from a solution of the all-important question of how the sewage of a large city, such as London or Glasgow, can be satisfactorily dealt with at a reasonable cost. But if this be somewhat depressing, yet one cannot help admiring the way in which science is striving to attain success, nor can one doubt that ultimately—it may be in the near future—its efforts will meet with the desired success.

The author gives the results of the various methods of sewage disposal employed in different towns, and the information afforded will be found of the greatest use to all interested in the question. Some omissions we have noticed; and certainly the index might, with advantage, be made fuller. We find no mention of the Berlin Sewage Disposal Works, which surely, both on account of their magnitude and what they have effected on the health of the inhabitants, were deserving of an extended notice. We would, however, at present rather overlook any deficiencies the book may have, and extend to it a hearty welcome as a most valuable addition to the standard works on the subject.

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*The Journal of Anatomy and Physiology, Normal and Pathological.*  
Part IV. of Vol. XXIV. London: Williams & Norgate:  
1890.

THIS number of the above journal contains several papers of considerable clinical and pathological interest. Thus Dr Henry Alexis Thomson has an important paper on "Acromegaly, with the Description of a Skeleton;" Dr William Aldren Turner writes on "The Pathology of Retro-bulbar Neuritis;" while Dr Walter K. Sibley discusses "The Nature of the Giant-cells of Tubercle," and Professor Humphrey "The Pathology of Genu Valgum." Dr Joseph Tillie continues his account of the "Pharmacology of Cinare and its Alkaloids," and Dr James Cagney describes the "Disposition of the Vertebral Column in Hanging and Swinging Postures." There are also several articles dealing with questions of more purely anatomical interest, such as Dr E. W. Carlier's "On the Fate of the Notochord in the Sheep," and Prof. Dwight's "On the Sternum as an Index of Sex, Height, and Age."

The paper on Acromegaly by Dr Thomson records the alterations in the skeleton from a characteristic case of this rare disease. So far only two similar skeletons have been described,—viz., by A. Broca in Paris and Virchow in Berlin. The skeleton described by Dr Thomson is that of a male subject, aged 36, who was admitted to Dr Claud Muirhead's wards in the Edinburgh Royal Infirmary



in 1878 on account of diabetes mellitus. While in hospital it was noticed that his hands and feet were very greatly enlarged, that his face was elongated, with the brows overhanging and the lower jaw protruding. These symptoms occurring in association are now regarded as characteristic of acromegaly.

After death the pituitary body was found hypertrophied, equalling a walnut in size; the abdominal viscera, more especially the stomach and intestines, were also the seat of a very considerable hypertrophy. In the macerated skeleton many interesting changes were observed, from which the existence of acromegaly during life could be inferred with considerable certainty. The most striking alterations in this specimen were to be found in the bones of the head, those in the extremities being slight in comparison with those described by Virchow.

In the skull there is a disproportionate increase in the dimensions of the face; the latter is elongated rather than broadened, and the elongation is mainly due to an increase in the vertical diameter of the superior and inferior maxillæ. In profile view the facial angle is diminished by the very considerable anterior projection of the chin. The superciliary ridges are large and prominent, project in front of the glabella, and by overhanging the orbital cavities impart a frowning and forbidding aspect to the skull as a whole. The prominence of these ridges was found to be partly due to the dilatation of the frontal sinuses.

The anterior projection of the lower jaw, observed during life in this and in other cases of acromegaly, depended not only on the hypertrophy of the jaw itself, but also upon changes in the temporomaxillary joint on either side, which resemble very closely the changes met with in arthritis deformans. The glenoid cavity was greatly enlarged from wearing away of the eminentia articularis bounding it anteriorly, thus permitting the condyle to slide forwards to an abnormal extent.

In the interior of the skull the pituitary fossa was very greatly enlarged, a result of the pressure of the body which occupied the fossa during life.

The cranium itself, as revealed by a series of comparative measurements, considerably exceeded the average in length, breadth, height, and cubic capacity.

The bones forming the cranial box were noticeably increased in thickness, there being no departure, however, from the normal structure such as that met with in osteitis deformans.

The bones of the trunk and limbs were abnormally large; more especially was this the case in the clavicles, ribs, pelvic bones, metacarpals, and phalanges. In appearance the bones were heavy and clumsy, the surface compact layer being rough and spongy, with an infinite number of grooves and apertures for bloodvessels. The ridges and processes for muscular attachment were very prominent. The costal cartilages were ossified.

Changes resembling very closely those met with in cases of arthritis deformans were observed in the vertebral column, in the shoulder and hip joints, and in the right elbow.

Professor Humphrey states that he has taught for many years that the essential feature of genu valgum is a deficiency in growth at the outer part of the lower epiphysial line of the femur. He shows that if a thigh bone be placed with its lower articular surface upon a table or any horizontal plane, a plumb-line will fall from the head of the bone obliquely through the shaft to the *outer* condyle. This and various other circumstances throw a difficulty upon the growing force in the outer part of the epiphysial line which in some young persons it is not quite equal to meet. From the examination of many specimens, he has seldom had reason to think that there had been any undue amount of growth of the inner condyle or the part above it.

## Part Third.

### MEETINGS OF SOCIETIES.

#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH

##### SESSION LXIX.—MEETING XI.

*Wednesday, 4th June 1890.*—Prof. A. R. SIMPSON, *President, in the Chair.*

#### I. EXHIBITION OF PATIENTS.

1. *Mr George A. Berry* showed a MAN, J. B., aged 21, from whose left orbit he removed the end of the stem of a clay pipe,  $1\frac{3}{4}$  inch in length by  $\frac{1}{2}$  inch in thickness. The patient when first seen had considerable protrusion of the eye with oedema of the lids and conjunctiva. The portion of pipe lay about 1 inch from the surface, and although it had been in the orbit for ten days had not produced suppuration. The eye was uninjured.

2. *Mr A. G. Miller* showed a successful case of LAPAROTOMY for tubercular peritonitis in a girl, aged 10, a description of which appeared at page 341 of this Journal.

#### II. EXHIBITION OF SPECIMENS.

1. *Dr James Ritchie* exhibited KIDNEYS from a female, age 48, of rheumatic constitution. She had borne ten children, for some years had been anæmic, not robust, and was liable to sudden acute attacks of pain in left lumbar region, accompanied by great pros-

tration and sickness, occasionally preceded by a copious flow of urine. There was no history of gravel, nor of acute inflammation of kidneys. Three years ago, upon examination during one of these attacks, there was found in the left hypochondrium a nodular elongated firm mass, slightly movable. Last July during an attack there was a considerable amount of blood in the urine, this being the only occasion on which blood was observed. At this time the right kidney also was found to be enlarged, with irregular surface. For a considerable time the urine had been copious, clear, sp. gr. about 1012, with a trace of albumen, no tube casts. There was a slight systolic mitral murmur. Since July there was no severe attack, and the patient was not examined; but about a fortnight ago, after having been out of doors, she took suddenly ill, and died within two hours, with symptoms of hæmorrhage into the pons. On examination, sixteen hours after death, the bladder and ureters were found to be perfectly normal, the right kidney slightly enlarged, with its pelvis considerably enlarged and distended with urine, which could be slowly evacuated by pressure. On section, the cortical substance had a granular aspect; it was slightly diminished in thickness, and the cones were compressed, some of them lying in an oblique direction. The left kidney was slightly enlarged, nodular, the pelvis enlarged, distended with fluid, not the smallest drop of which could be squeezed out by pressure. On section, it was found that the nodules represented dilated calyces, the kidney substance was almost destroyed by pressure, not the slightest trace of former opening of ureter into the pelvis could be discovered. The pelvis and calyces contained 150 cm. of fluid. There was no trace of calculus. During life the patient presented many of the symptoms found with cystic kidney; there was no history of stone, nor of inflammation of kidneys. Dr Ritchie hoped that microscopic examination might aid in elucidating the cause. The wall of the left ventricle was an inch and a half thick, the mitral valve considerably thickened and roughened at the edges, the aorta and renal vessels much thickened with succulent atheromatous patches.

2. *Dr W. Russell* showed a large HYDRONEPHROTIC KIDNEY, due to the occlusion of the ureter by a large calculus still *in situ*. The patient was a man, aged 31, who was under Dr Muirhead's care last January for the kidney condition. The tumour in the loin was at that time aspirated, and fluid containing urea was removed. No further operative measures were adopted, as the patient was suffering from double aortic lesion and mitral regurgitation.

3. *Dr Allan Sym* showed a BRAIN from a young woman, aged 22, with multiple hæmorrhages in the optic thalami. The girl had been ill for about ten days. Dr Sym was sent for on Saturday,

when she was complaining of bilious vomiting. He ordered a purge, and she was much better on Sunday. On Monday, at 4 A.M., she became unconscious, with varying breathing, at times cerebral. Pupils at times contracted to light, and then again would not. Temperature never rose above  $102^{\circ}$ ; pulse variable. Dr Burn Murdoch saw her in consultation, and they agreed on cerebral disease, but what they did not know. There were at that time jerkings and stiffening of the limbs, and symptoms most peculiar. She died on Tuesday at 5 A.M. Post-mortem changes came on very rapidly. Dr Littlejohn kindly did the post-mortem examination, and in addition to the condition mentioned, they found excessive fluid in the lateral ventricles.

### III. EXHIBITION OF INSTRUMENTS.

1. *Mr Charles W. Cathcart* read a Note on an APPARATUS FOR STERILIZING STEEL INSTRUMENTS BY STEAM WITHOUT RUSTING THEM, which appeared at page 119 of this Journal.

2. *Dr Hughes* showed a SPLINT, which he stated was an extremely simple one, and intended for the treatment of talipes varus and equino-varus. It was a modification of a shoe which he had seen used in the practice of Mr Thomas of Liverpool, which consisted of a leg-piece and foot-piece, connected by an iron band extending over the heel. In this modified splint a joint was placed opposite the heel, the joint being a three-quarter ball and socket, the ball being for the purpose of fixing the joint by means of a screw running through it. The movable parts of the joint were the sockets connected with the leg and foot-pieces. The foot-piece might be fixed in any position of inversion, eversion, flexion, and extension. In applying the splint the leg-piece was bandaged to the calf, and the foot manipulated into the best possible position, the foot-piece was then adapted to it, and fixed until the patient was seen again, when the position might be further improved by loosening the screw and manipulating the foot.

*Dr Wm. Taylor* was glad to see a pupil of his friend Dr Thomas, and to find that he had caught some spark of his inventive genius. He was curious to know whether Dr Hughes had seen any harm result from Dr Thomas's method of using sheet-iron splints in the treatment of club-foot *without* padding of any kind, applying the bare iron to the bare skin. If so, that was in itself a great gain, because you could get much more direct control over the deformed part, and keep it in more exact position. The splint shown would form an important auxiliary in the treatment of club-foot, although the great thing was to treat it as a paralysis, which was too frequently forgotten.

*Dr Hughes* replied that he had never seen any ill effects



from the use of iron instruments in close relation to the skin; but he believed that to avoid injury to the skin and soft parts it was essential that all such apparatus should fit *perfectly*, and allow of no friction whatever. As to the force used in the reduction of deformity, he could state that he had repeatedly seen Mr Thomas use considerable force in the treatment of club-foot by means of his wrench, but had never seen any bad results, nor any evidence of injury to the soft parts.

#### IV. ORIGINAL COMMUNICATIONS.

1. *Dr T. R. Ronaldson* read his paper on TETANOID CONVULSIONS IN AN INFANT, which appeared at page 330 of this Journal.

*The President* thought the Society were indebted to Dr Ronaldson for his record of this very interesting case. The history seemed to point very clearly to a morbid condition in the umbilical scar as the source of irritation, especially the circumstance that the decadence of the cord had been so long delayed. Infective processes at the root of the cord were sometimes the cause of inflammatory mischief, and some of the German obstetricians insisted on the necessity in all cases of dressing the cord with antiseptic wool, as was practised by Dr Ronaldson. As to the use of a sterilized ligature for securing the cord, the President thought it was more important to tie the cord with an elastic thread or tape, which gave the greatest security against the occurrence of hæmorrhage.

*Mr Cathcart* asked Dr Ronaldson how much of the umbilicus had been excised, in view of the doubt which exists as to whether tetanus is due to the poison produced by a special micro-organism acting on the centres, or acting upon the peripheral ends of nerves. Clinical evidence seemed to point towards both views. Undoubtedly, although some kind of contamination of a wound seemed to be necessary for tetanus, ordinary sepsis was often absent; and benefit had been known to follow the excision of a nearly healed wound.

*Dr James Carmichael* asked Dr Ronaldson whether there were any symptoms indicative of septic blood poisoning. He understood him to say there were not; but from the treatment adopted after consultation with Dr Brackenridge, in the administration of the sodium sulpho-carbolate, he presumed there must have been some reason for supposing there was blood contamination. Such spasms in children might be due, as was well known, among other causes, to altered blood conditions as well as peripheral irritation of any kind. The case he thought an interesting one, and well worthy of record.

*Dr Felkin* was much interested in hearing Dr Ronaldson's case, as he had seen some forty or fifty cases of tetanus occurring in newly-born infants in Central Africa. Most of the cases he had seen led him to agree with Dr Brackenridge's view of the case, but at the same time he had seen cases where there was undoubted

septic infection. In Dr Felkin's experience the removal of the remains of the umbilical cord and the free use of antiseptics had been followed by marked benefit in at least half of his cases.

*Dr Brakenridge* said that the case which Dr Ronaldson had brought under the notice of the Society had interested him very much, and he thought there could be no doubt that the disease had yielded to treatment. It was impossible to draw any positive conclusions from one case; yet, while Dr Ronaldson was disposed to give the credit of the cure to the surgical operation, he wished to adduce a few reasons for believing that the benefit was rather due to the influence of the antizymotics employed,—viz, the carbolic acid dressing applied to the wound in the first instance, and the sulpho-carbolate of sodium administered internally afterwards. This belief was forced upon him by the progressive facts of the case, in opposition to the view he was at first disposed to take. When he first saw the patient he agreed with Dr Ronaldson in thinking that an operation was called for, as he believed that the fits were probably due to some peripheral irritation caused by an unhealthy condition of the umbilicus; and when, after the removal of a portion of the umbilicus, the fits ceased, he was satisfied that this view was probably correct. Subsequent events, however, decidedly modified this conviction. Soon after the operation Dr Ronaldson told him that, while the fits remained absent, the child had been so saturated with the carbolic acid of the dressing that there were symptoms of carbolic acid poisoning, and that, after simpler dressing had been substituted, as soon as the symptoms of poisoning had passed off the fits had returned in considerable severity. This struck him as remarkable. At Dr Ronaldson's request he called on Mr Chiene, who agreed with him in thinking that, in the circumstances, it would be wise to try the internal administration of carbolic acid or some similar drug, and Dr Ronaldson finally decided to give sodium sulpho-carbolate in suitable doses. Now, it was very remarkable that, very soon after the administration of the sodium sulpho-carbolate had been commenced, the fits ceased; still more so that on stopping the drug they recurred. This cessation and recurrence of the fits followed the giving and stopping of the drug several times; and the sulpho-carbolate was finally given for a considerable length of time, and then gradually diminished. After it was stopped no further fits occurred. This case produced a strong impression on his mind. Of course the final settlement of the case—surgical treatment *versus* antizymotics—must depend on the final settlement of the true pathology of trismus. But here it might be noted that recent researches, and a careful inquiry into all the facts regarding the pathology of trismus neonatorum, were very strongly in support of the view that this disease was mainly due to the influence of a micro-organism. Hirsch, in his admirable handbook on *Geographical and Historical Pathology*, said, "Among the

authorities on lockjaw in the new-born, there is but one opinion, that the disease is almost confined to the crowded and filthy dwellings of the poor, or to badly kept foundling and lying-in hospitals, breaking out in the latter whenever the insanitary state arises as a result of overcrowding, or of an epidemic of puerperal fever, or the like." He referred, in confirmation of this, among numerous other facts, to Clarke's experiences of the Rotunda Hospital in Dublin, from 1757 to 1789, when, of nearly 2000 infants born, "16 per cent. died, most of them from trismus;" whereas, after hygienic reforms had been instituted, this mortality was at once reduced to 5 per cent. Flüge, in his work on the *Etiology of the Infective Diseases*, referred to the researches of Nicolaier of Göttingen, who demonstrated that, when garden earth was introduced under the skins of mice and rabbits, there were frequently developed tetanic symptoms after an incubation period of  $1\frac{1}{2}$  to  $2\frac{1}{2}$  days. This was not the case if the earth was first previously heated to  $190^{\circ}$  C. Further, the disease could be transmitted by inoculation from animal to animal. Nicolaier was further able to cultivate the infective organisms. Carle and Rattone had recently excised the seat of infection, shortly after death, in a patient who died of tetanus, and made an emulsion of the tissue. Of 12 rabbits into whose dorsal muscles or spinal canal this emulsion was injected, 11 developed typical tetanus after two or three days' incubation. Beumer, Peiper, and others had obtained similar results. These researches were strongly in favour of the view he was inclined to take of this interesting and instructive case, and highly suggestive of the lines on which the future treatment of the disease might be expected to prove successful.

Dr Playfair listened with great pleasure to this very interesting case, and would also beg heartily to thank Dr Ronaldson for bringing it before them. While he thought it was likely the condition of the cord was the cause of the fits, he did not think it was absolutely proved to have been so. One or two points seemed to throw doubt on this. First, the condition of the anterior fontanelle, which was described as somewhat full, seemed to point to some brain disorder. The unilateral character of the fits, at least in their commencement, and the implication of the facial muscles, indicated also that the brain was involved. There might, therefore, have been in this patient some congenital or other brain disease, which either caused, or at least intensified, the convulsive seizures. The farther progress of the case should, therefore, he thought, be watched. The case was also extremely interesting, as showing how well some infants bear convulsive attacks. It was well known that reflex movements were extremely active in infants, probably due to the non-development of the centres controlling reflex movement.

Dr Aitken mentioned a case which showed the difficulty of accepting the "infective," or purely reflex character, of the con-

vulsive seizures. An infant, whose father suffered from lung consolidation, with hæmorrhage, commenced about ten days after birth to cough very frequently and severely, with no physical sign in lungs. The first fear was tuberculosis, but a large granulation being discovered at the umbilicus, it was thought that the cause was reflex. Soon, however, the case developed into whooping-cough, which speedily attacked a second child in the house.

*Dr Ronaldson*, in replying, thanked the Society for their kind reception of his paper. In answer to *Dr Carmichael's* question with regard to symptoms of septic poisoning, he was able to state that there were no such symptoms, and that there were no other signs or symptoms of any disease apart from the convulsions, and they were, therefore, by exclusion, thrown back on the umbilical condition as the source of the illness. In reply to *Dr Playfair*, he would refer to his paper, where the anterior fontanelle is described as "*somewhat* fuller than usual;" and this is explained by the "exceptionally well-nourished condition of the child." That point was carefully considered, and they decided that there was no indication of brain disease. He had already stated that, in his opinion, excision of the umbilicus, and not the internal treatment, determined the recovery; but he was sure they all wished that *Dr Brakenridge's* view was correct, and that they had some medicinal agent which could help them in such cases.

2. *Dr W. Taylor* read a paper on a HISTORY OF AN ABDOMINAL LIGATURE, and *Dr Wm. Russell* gave the PATHOLOGICAL REPORT. They will be found at page 452 of this Journal.

*Dr Berry Hart* thought *Dr Taylor's* paper and the result of *Dr Russell's* post-mortem examination exceedingly valuable. It must be remembered, however, that trouble with the ligature was very rare, and that practically its use was exceedingly valuable. He doubted whether *Dr Russell* had established his point as to malignant disease; the description given seemed to suggest some atrophic connective tissue change analogous to *Freund's* parametritis atrophicans. *Dr Russell's* opinion, however, was of more value than his.

*Mr Cathcart* asked *Dr Taylor* if the exact condition of the excised ovaries and tubes was known. Possibly an originally malignant growth in the ovary had returned after its apparent removal. *Sir Joseph Lister* had pointed out many years ago that silk ligatures are very slowly absorbed, and may become a focus of suppuration, if suppurative micro-organisms should get access to the circulation.

*Dr Taylor* replied that the left ovary, for which the operation was performed, had no appearance of malignancy, and no microscopic examination was even suggested by the appearances. It consisted of what one might call a large and several small normal cysts. Had it been malignant, the pedicle of the right side, and



not the left, would have been the seat of the subsequent mischief. The right ovary, which was removed, was healthy. It was removed more as a precautionary measure, in case it should afterwards become like the left one.

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## MEETING XII.

Wednesday, 2nd July 1890.—Prof. A. R. SIMPSON, *President, in the Chair.*

### I. EXHIBITION OF PATIENTS.

1. *Mr Francis M. Caird* exhibited a case of recovery after AMPUTATION FOR SPREADING GANGRENE. This was the case of a man, æt. 22, who was admitted with a poisoned wound of the hand, the result of a bite received in a fight a week before. Moist spreading gangrene ensued in spite of free incisions; the hand and lower part of the forearm died, and the limb was brawny and covered with bullæ. Amputation was performed through the upper third of the humerus. The patient swam for his life for a few hours, and required copious stimulation, but ultimately made a good recovery.

2. *Prof. Greenfield* exhibited—(1.) A case of THOMSEN'S DISEASE, and described the leading features of the condition. The patient, a lad of 19, had been under treatment in various hospitals, and his case had been fully recorded by Drs Hale and Sweeten of Cardiff in the *Brit. Med. Journ.* for January 1890, and by Dr Hale White in the *Guy's Hospital Reports* for 1889. (2.) A case of DISEASE which presented some characters allied to those in Thomsen's disease, but also others more allied to pseudo-hypertrophic paralysis. From the fact that he had not been able to discover any similar case on record, he had been driven to give a name derived from the leading anatomical change discovered, and called it progressive diffuse myosclerosis. The patient, a man 44 years of age, had been under observation for four and a half years. There was a progressive enlargement of the muscles, followed by their contraction and atrophy, producing great deformities. Microscopical examination had shown the change in the muscles to be a chronic interstitial inflammation, but it was not attended by any marked weakening of the muscles, except in proportion to their subsequent atrophy and shortening. One of the most remarkable phenomena was the extreme readiness with which tonic contraction of the muscles was excited by voluntary movements, and the very long period of persistence of the contraction, which was from twenty to thirty seconds, or even longer. It could even be excited by passive movement during sleep, or whilst the patient was under chloroform.

## II. EXHIBITION OF SPECIMENS.

1. *Dr John Playfair* exhibited a specimen of STENOSIS OF THE INTESTINE due to the pressure and adhesions of a mass of enlarged tubercular glands. The preparation was obtained at the post-mortem of a girl of 11, who was admitted to the Children's Hospital on the 24th March, and died on 15th May 1890. She had always been a delicate child. Her illness began, six weeks before admission, with pain in the abdomen, and diarrhoea. Vomiting also set in. When admitted she had no diarrhoea and very little pain, but soon vomited a large quantity of undigested food mixed with mucus, and of a greenish colour. No abnormality could be detected in any of her organs, and no abdominal tumour could be felt. She continued to vomit at irregular intervals, and gradually to emaciate till she died. Her temperature kept normal or subnormal throughout. Her bowels were constipated, and were moved by enemata. On one or two occasions the motions contained dark-coloured blood. The day before she died a small mass about the size of a hen's egg was felt lying about an inch above the umbilicus, and to the left of the spine. The post-mortem revealed a mass of enlarged tubercular glands the size of a small orange, lying behind the third portion of the duodenum. The glandular swelling had formed adhesions to the pyloric end of the stomach, and head of the pancreas and duodenum, and constricted the lumen of the bowel to the size of a No. 2 or 3 catheter. Above the constriction the duodenum was much dilated. The mesenteric glands near the ileum were found enlarged, and in the small intestine were a number of small tubercular ulcerations, with minute deposits of tubercle in the subserous coat.

2. *Dr John Thomson* exhibited a drawing and specimens of a FROZEN SECTION OF THE SPINAL COLUMN from a case of Pott's disease. The patient was 9 years of age, and had suffered from spinal disease for more than eighteen months. The body of the ninth dorsal vertebra had been almost entirely destroyed by disease, and a portion of dead bone was seen to be forced against the posterior aspect of the pleura by the displacement. There were a few recent adhesions in the pleural cavity in the neighbourhood of the disease, and had the child lived a little longer, empyeina would probably have been produced. The cervical spine was also extensively diseased, the intervertebral cartilages between the second and third and third and fourth vertebræ being quite destroyed. Some weeks before death an abscess had formed in front of the bodies of the cervical vertebræ, which burst into the pharynx, and finally led to extensive gangrene of the connective tissue of the neck, owing to food entering into and decomposing in its cavity.

3. *Dr Burn Murdoch* showed an ENCHONDROMA OF THE RIGHT LUNG and CAST OF LEFT HAND and PHOTOGRAPHS from a patient,

aged 34, who suffered from multiple enchondromatous tumours of right and left metacarpal and phalangeal bones since childhood. Two years before patient's death there appeared a large chondrosarcoma on the right scapula, involving the clavicle. This was followed by rapid development of growth, with emaciation. On 17th December 1883 Dr P. H. Watson removed the arm, scapula, and outer third of clavicle. The tumour was at least as large as a man's head. Recovery was rapid. Symptoms of double pleurisy, with effusion, occurred in October 1884, and death took place in November 1884. Both lungs were found studded with chondrosarcomatous growths, varying in size from a pigeon's to a hen's egg, and there was copious clear effusion into both right and left chest.

4. *Dr James Ritchie* showed a specimen of GASTRIC ULCER from a male, aged 43. He had for years suffered from indigestion, but for some weeks had been worse. He complained of pain, gradually increasing until relieved by vomiting at intervals of a few days. Fluid in considerable quantity was put up, and on a few occasions it had contained material like coffee grounds. On examination, the stomach was considerably dilated; there was marked splashing on palpation, tenderness in right hypochondrium; the vomited matter contained sarcena. After consultation with Professor Grainger Stewart, it was decided not to wash out the stomach through fear of hæmorrhage. The diagnosis was ulcer at pylorus, contraction of that orifice (partly spasmodic), and dilatation of stomach. Before treatment was begun there was a very copious hæmorrhage, blood being passed both upwards and downwards in large quantity, leaving the patient very prostrate. There was no recurrence of hæmorrhage for six weeks, during which time there was marked improvement; then small hæmorrhages frequently recurring exhausted the patient. There were several points of clinical interest: the complete absence of sarcinous vomiting after starchy and saccharine food had been excluded, the consciousness of the patient when food was leaving the stomach in consequence of pain and gurgling, the ability of the stomach to deal satisfactorily with a limited amount of suitable food. The ulcer was at the pylorus, its base formed by the pancreas. The wall of the stomach much thickened near the ulcer; an artery of considerable size was opened into, probably the pyloric inosculating with the coronary. It is a matter of wonder that the hæmorrhage was arrested at all.

### III. ORIGINAL COMMUNICATIONS.

1. *Mr Francis M. Caird* read a paper on the TREATMENT OF COLD ABSCESS, which appeared at page 226 of this Journal.

*Dr James Ritchie* remarked that in the days of Syme, and even at a later period, it was considered a very dangerous proceeding even to squeeze the pyogenic membrane of chronic abscesses with the

fingers ; to-day Mr Caird showed the great advantage of removing that membrane completely, and by means of the finger only, the results being far in advance of the old treatment.

*Mr A. G. Miller* expressed his interest in the subject of Mr Caird's paper, and thanked him for the interesting manner in which he had treated the subject. The treatment by scraping was common, but he thought Mr Caird's suggestion to use the finger only was a good one, as the operation could be more carefully performed. Mr Miller thought, however, that the important points in the treatment of such cases were the approximation of surfaces and rest after evacuation. Cure might, however, be expedited and made more certain by the scraping. After hearing Mr Caird's paper, Mr Miller would give more attention to scraping with the finger-nail.

2. *Dr John Playfair* read his paper on CROUPOUS PNEUMONIA IN CHILDREN, which appeared at pages 303 and 401 of this Journal.

*Dr Greenfield* congratulated Dr Playfair upon his very valuable contribution to the study of pneumonia. The frequency of acute lobar pneumonia in children was apt to be overlooked. But he thought too much might be made of the supposed differences in the phenomena of pneumonia in children as compared with adults. He had recently made an analysis of a series of cases under his care in the Royal Infirmary, mostly in adults, and of a number about equal to those tabulated by Dr Playfair. From his experience he could say that in several respects, such as the latency of the physical signs, the duration and course, and the character of the complications, an almost exact parallel might be drawn. But they were undoubtedly points to which more attention should be directed, both in children and in adults.

*Dr Alex. James* said that with the previous speaker he wished to express the pleasure which he had felt in listening to this paper, and the interest with which he looked forward to its careful perusal by-and-by in a printed form. At present what he had to remark was, that though in most respects young and adult pneumonias were really more alike than they may have appeared to be, and that this is perhaps specially the case as regards physical signs,—the dulness, etc., often not showing till close on to the crisis,—yet that as regards symptoms the great latency in children is usually very marked. Expectoration in children is not to be looked for, but chest pain and cough are often not present, or at any rate not observed, so that we often see what has been supposed to be a typhoid fever or a meningitis turn out to be an acute pneumonia. The statement that in children an upper lobe pneumonia is as favourable as a lower lobe affection appears a little peculiar. It is different from what we believe to be the case in the adult, and is interesting in connexion with the fact that in children's phthisis the lower parts of the lung are—pro-



portionally to the adult—more frequently the seat of disease. But may not this apparently less serious upper lobe pneumonia of the child be explained by the fact that the disease runs a more favourable course in children, whether affecting either upper or lower lobe?

*Dr James Ritchie* found nervous symptoms to be most severe in pneumonias of debilitated persons somewhat advanced in life; in children he did not find that these symptoms were affected by the portion of lung involved, but partly by the amount of fever, and to a much greater degree by the constitution of the child. The relation of bronchitis to pneumonia he found to be varied. He had met with many cases commencing with the physical signs of bronchitis over both lungs, but suddenly these had entirely disappeared and been replaced by those of croupous pneumonia affecting one lobe. Many cases of so-called late development of physical signs he believed to be central pneumonias, but he had frequently found in children that a common situation for the early detection of physical signs was the upper part of the lower lobe of the lung in the axillary line. He had found poultices most efficacious, soothing to the patient, and he found that when not applied very hot, and changed only every four or six hours, they lowered the temperature. If they were found to be irksome he used a jaconet jacket lined with cotton wool, and had a stimulant applied to the skin. He rarely used expectorants in the pneumonias of children. If any tendency to flag, carbonate of ammonia and digitalis. Antipyrin and antifebrin he thought prejudicial, unless in hyperpyrexia. He preferred cold sponging.

*Dr H. M. Church* asked whether, in any of the cases which were complicated with empyema, the pus had been found sacculated about the apex of the lung; for in such cases the diagnosis was often difficult, especially if there was dulness at the base of the lung. In these cases exploratory punctures were disappointing, if made at the usual points at the lower part of the lung. He inquired by what means *Dr Playfair* had kept his cases of empyema aseptic after operation. *Dr Church* had, during the winter, met with two cases of the kind. He also thought that antipyrin and antifebrin should be given cautiously, and with due regard to their compatibility with other drugs. For instance, if antipyrin and sweet spirits of nitre are given together, a compound of the nature of carbolic acid is formed, which might be injurious to the patient.

*Dr Playfair* cordially thanked the members for their very kind reception of his paper. He agreed with *Prof. Greenfield* that the physical signs of pneumonia were often delayed in the adult as well as in the child, but thought the delay was more marked in the child. As to antipyretics, he had no doubt whatever but that they acted generally much more decidedly and quickly in children than in adults. He agreed with *Dr Ritchie* that a high temperature

was not the sole cause of nervous complications in the diseases of children. In reply to Dr Church, the chest in the empyema case was opened and dressed under a douche of corrosive sublimate solution. He never had any difficulty in thus keeping such cases antiseptic throughout.

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## Part Fourth.

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### PERISCOPE.

#### MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

HYDRONAPHTHOL.—In the July number of the *Practitioner*, Dr J. Mitchell Clarke, after relating certain experiments with this substance, sums up thus—"The experiments show hydronaphthol to have a very distinct retarding influence on the digestion of egg-albumen by peptic fluids, to have a very slight effect on the digestion of milk by the same, and to have no effect at all on pancreatic digestion of milk or albumen, nor on the conversion of starch into sugar. Milk was chosen as representing all classes of food stuffs, and as being the staple diet in fevers and intestinal complaints, and the quantities selected were taken to represent as nearly as possible the proportions of milk and hydronaphthol likely to be present in the stomach at any one time, supposing the latter to be taken in doses of 2 to 3 grains every two or three hours. Consequently we may conclude that to most patients on milk only, hydronaphthol may be given without fear of serious interference with digestion; that if there should be sickness whilst it is being administered, this is probably due to retardation of peptic digestion and accumulation of undigested curd in the stomach. It would be advisable in the latter case to give the remedy in pill form coated with keratin, in order that it might pass through the stomach, and first be set free in the duodenum. I have generally prescribed it in gelatine capsules, or simply suspended in milk, but it would probably be equally efficacious given in pill form coated with keratin. As to the dose, 2 or 3 grains every two hours is sufficient; in diarrhœa, after the first three to six doses it may be given every three or four hours provided the effect is maintained. For children under one year the dose is  $\frac{1}{2}$  grain, to older children  $\frac{1}{2}$  to 1 grain every hour or every two hours, or less often according to circumstances. Five cases of typhoid fever were treated with hydronaphthol; all did well, though two of the cases were severe and prolonged. The diarrhœa was very severe on admission in the two latter, but stopped soon after we gave hydronaphthol." "I think it will be found a

valuable remedy in the diarrhoea of children—with green-coloured stools—so prevalent in late summer and early autumn.”

**SALOL COLLODION.**—It is recommended in the *Répertoire de Pharmacie* for July 10, 1890, to dissolve four parts of salol in four parts of ether, and then add to thirty parts of collodion, and it is stated that the application of the salol collodion to the affected parts in acute rheumatism will be followed by rapid relief of pain.—*Therapeutic Gazette*, August 1890.

**NITRITE OF AMYL** is recommended as the most rational and successful antidote to use where chloroform or cocaine seem to threaten life by their unfavourable action on the heart. A few drops of nitrite of amyl administered by inhalation will be one of the most probable means of restoring the heart's action.—*The Journal of the American Medical Association*, 5th April 1890.

**INDICATIONS FOR THE USE OF GLYCERINE INJECTIONS AND SUPPOSITORIES.**—The observation of the effects of glycerine injections and suppositories in a large number of patients has led Dr Polubinski (*Deutsche Medizinal Zeitung*, June 19, 1890) to the following conclusions:—There is no doubt that glycerine irritates the mucous membrane of the rectum. This is shown both subjectively in the burning produced by it, and objectively by the ascending of the mercurial column of the thermometer, if pushed deep enough within the intestine. The increase of temperature and the desire to defecate are of but short duration, and the latter may often be overcome voluntarily by the patient. The irritation of the mucous membrane produces no local secretion, since the fæces, evacuated as a consequence of injections of glycerine, are only covered with glycerine. The author obtained the best results when the rectum and sigmoid flexure are filled with scybala. If fæces collect in the upper parts of the intestinal tract, glycerine is then inefficacious. According to the author, therefore, the cases in which glycerine enemata and suppositories are indicated, are,—*First*, when the fæcal masses are already in the rectum; *second*, when they are in the parts of the large intestine immediately above, as occurs so often in lying-in women; *third*, in diseases or physiological conditions which produce mechanical pressure on the rectum or sigmoid flexure, such, for example, as new formations in the pelvis, pregnancy, etc.; *fourth*, in scrofulous children; *fifth*, in persons who, although they may daily succeed in having evacuations of the bowels, yet in whom the act of defecation is only accomplished with difficulty and accompanied by pain, and in whom in general the fæces are of excessive density.—*Therapeutic Gazette*, August 1890.

**THE BROMIDE OF ETHYL AS AN ANÆSTHETIC.**—Quite a number of articles have recently been published on bromide of ethyl as an anæsthetic, which seem to indicate that this agent is again acquiring a certain amount of repute in minor surgical operations. In the

*Journal de Médecine de Paris* for June 15, 1890, is an abstract of a number of papers from various authors advocating the use of bromide of ethyl as an anæsthetic. Szuman and Thorn confirm the experience of Asch and Pauchinger as to the applicability of this substance for the production of anæsthesia in slight operations not lasting more than a few minutes, and in practical obstetrics. They recommend to apply a chloroform mask directly to the nose and mouth, and to moisten this with  $\frac{3}{4}$  to 1 ounce of the anæsthetic. With this amount of anæsthesia painful sensation is completely suppressed, while tactile sensibility and consciousness are generally preserved. Dr Szuman goes still further, and recommends the employment of bromide of ethyl in graver operations, as in the extirpation of goitre or ovariectomy. Dr Gilles of Cologne is stated to have applied the bromide of ethyl in more than four hundred and fifty cases of operation on painful teeth, and has come to the conclusion that we possess in the chemically pure bromide of ethyl an excellent anæsthetic, acting with promptitude and certainty, and, when carefully administered, without danger, and an anæsthetic which cannot be too highly recommended to dentists, as it is superior to chloroform, nitrous oxide, cocaine, and all other anæsthetics. In order to obtain complete analgesia, Szuman and Gilles are in accord that the bromide of ethyl should not be poured upon the anæsthesia mask drop by drop, but that the cloth should be thoroughly saturated, and then closely applied to the mouth and nose, since the simultaneous inhalation of air in any quantity greatly diminishes the effect. The amount of bromide of ethyl required to produce complete anæsthesia will rarely exceed 150 to 300 drops. The effect is evident in half a minute, while in children even a smaller quantity will produce anæsthesia in about fifteen seconds. It is stated that these authors have observed no secondary dangerous symptoms, especially no diminution in the pulse, and no difficulty in respiration.—*Therapeutic Gazette*, August 1890.

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### MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

*Berlin. Klin. Wochensch.*, No. 37, 1890.—Dr Paul Guttman gives his experiences of the therapeutic uses of "Salipyrin." This drug is a compound of salicylic acid and antipyrin. According to its elementary analysis it has the formula  $C_{13}H_{15}N_2O_4$ . The preparation is a white crystalline powder which contains 57.7 parts of antipyrin and 42.3 of salicylic acid in the hundred. It has no smell and has a sharply acid taste, and is easily soluble in alcohol, but with difficulty in water (about 1-200).

1. Salipyrin lowers febrile temperatures. To obtain this result in continued fevers a total dosage of 6 grammes is needed, divided into five doses given hourly. The most suitable prescription is 2



grammes for the first dose and 1 gramme hourly for the other four. This total dose of 6 grammes reduces temperature about  $1\frac{1}{2}^{\circ}$  to  $2^{\circ}$  Cent. The lowest temperature is reached in three or four hours, it then begins to rise, but it is four or five hours before the original temperature is again reached. Reduction of temperature is mostly accompanied by more or less copious perspiration, which is not disagreeable to the patient. Pulse frequency sinks with the temperature. No rigors accompany the rise of temperature after the drug has ceased to operate.

Salipyrin is more efficacious in the remitting than in the continuous forms of fever, an experience which is valid for all antifebrile drugs. In phthisis, for instance, one can bring about a reduction of temperature by 3 or 4 grammes given in two or three hours to the extent of  $1\frac{1}{2}^{\circ}$  to  $2^{\circ}$  Cent.: 5 grammes causes a fall of  $2\frac{1}{2}^{\circ}$  Cent. The duration of the fall lasts longer than in the high continued fevers. In general the operation of the drug lasts the longer the lower the temperature is reduced; this again is empirically true of all antipyretics.

2. Salipyrin is efficacious in acute joint rheumatism. Pain and swelling lessen, and active motion of the joints is gradually restored. This efficacy is equal to that of salicylic acid and its derivatives, and to that of antipyrin. It does not protect from relapses any more than other drugs. The total dose per day given in the rheumatic cases was 6 grammes divided into six doses, and given at bi-hourly intervals.

3. Salipyrin is useful in cases of chronic joint rheumatism and in sciatica of rheumatic nature.

4. It causes no uncomfortable sequelæ. Numerous patients have taken the remedy in daily doses of 6 grammes for two weeks, and more so that the total dose in one case was 105 grammes. In one case only an exanthem of papular and urticaria nature spread over all the body. This rash is of no importance, and disappears in a few days. Other sequelæ have not been noticed. The colour of the urine is not altered during use of salipyrin; salicylic acid is easily demonstrated in it by the addition of ferrous chloride.

Dr Guttman, after using 2000 grammes of salipyrin, comes to the conclusion that it is a useful medicine, and can find application for the same therapeutic purposes as antipyrin and salicylic acid. Its dose must be double that of antipyrin to obtain its antifebrile action. Its price must be more moderate before it can be extensively used in practice.

*Ibidem*, Nos. 37 and 38.—Heryng of Warsaw asks if laryngeal phthisis can be cured by endo-laryngeal surgical proceedings, and answers the question in the affirmative. In slight cases he begins with mild means, such as menthol, Peru balsam, weak solutions of lactic acid, inhalations of Peru balsam, and pays attention to the general condition of his patient and to the progress of any accompanying lung affection, and recommends kreosote, arsenic,

strengthening diet, climate, and so on: he does not attack every consumptive who falls into his hands with knife or curette or pincers. His optimism as to the curability of laryngeal phthisis and the efficacy of surgical treatment in many cases is founded not only on clinical observation, but is strengthened by microscopical and bacteriological investigations pursued for several years. It culminates in the (through theory and practice) ever more corroborated experience, that larynx phthisis exists as a primary disease, that this is oftener the case than is generally supposed, that a general affection or secondary lung affection is often caused thereby; furthermore, that primary creeping, tubercular deposits develop in the larynx, that these can be removed by surgical treatment, and thus prevent further infection and certain destruction.

The indications for the use of the curette are found in all limited, tubercular, slowly developing infiltrations even when they show no tendency to breaking up. Even in more advanced cases with lung disease and a certain amount of fever, if this is not hectic in character, it is not contra-indicated.

If the tubercular infiltration, as is often the case, is limited to the posterior wall of the larynx, an early radical removal of the morbid deposit brings the process to a stand for months or years, and the functions of the larynx are restored.

But also in many diffuse infiltrations which run their course with great virulence, indications for surgical interference are to be found, such as excessive dysphagia caused by inflammatory swelling and ulceration of the epiglottis or posterior laryngeal wall. Here, although cure cannot be obtained, energetic, well carried out surgical measures can relieve in a rapid way the sufferings of the patient.

The curette is therefore indicated—

1. In limited infiltrations or exuberant ulcerations of the posterior larynx wall, and fresh, one-sided, inflammatory infiltrations of the epiglottis; these are often the precursors of laryngeal phthisis.

2. In infiltrations and deep ulcerations of the superior vocal cords.

3. In spreading ulcerations with formation of granulations, which proceed from the surface or borders of the vocal cords and often cause granulation stenosis, and also in tumour-like and polypoid neoplasms and excrescences.

The maxim here is to scrape deeply and energetically. A timid, frightened pottering at the infiltrations is of no use and does harm, because the partial success causes the physician to distrust the operation when it has only been carried out in a defective manner, and the patient is also demoralized.

The operation is contra-indicated in depressed emaciated persons destitute of strong will, in persons with very high fever, and in those who cannot bear the use of the mirror.

The possibility of a resorption of tubercular infiltrations has been anatomically demonstrated. There are two species of infiltration. The first offers the appearance of scattered knots in the

submucosa or deeper layers, and may histologically be named reticulated tubercle. Those nodules almost constantly contain giant cells, many epithelioid cells, and relatively less numerous lymphoid elements.

They appear as rounded, tolerably sharply limited foci, contain usually few bacilli which are to be found in the giant cells. The tissue between the foci is not very much altered, but is usually penetrated with lymphoid cells. The diseased tissue is seen to be thickened, the mucous lining reddened, tense, and little succulent. This condition may last long before breaking up begins. Microscopically the epithelium is unaltered or only hypertrophic, and often shows finger-like formations passing down into the deeper layers. Sooner or later those foci become the seat of ulceration and destruction, and infect the neighbouring tissues.

Microscopically the second form, the diffuse infiltration, looks quite different. The alterations begin here mostly superficially under the epithelium. We see there a diffuse, small-celled, tubercular infiltrate which has made its way everywhere, penetrated everywhere, as well between the mucous glands and their ducts as the bloodvessels. It destroys everything, compresses the tissues, degenerates the bloodvessels later on by causing peri- or endo-arteritis tuberculosa. The tissues, robbed of blood and nourishment, soon die and decompose and ulcerate. The process is hastened by the colossal masses of bacilli which lie in layers below the epithelium, the secretions infect, a mixed infection of staphylococci and other pus-forming microbes comes on, the destruction rapidly passes deeper, and may cause perichondritis, and even necrosis of the cartilages.

Clinically this form is marked out by extensive, diffuse infiltrations, inflammatory œdema, crateriform loss of substance, and profuse purulent secretion. If we find, after the inflammatory phenomena, of themselves or by aid of art, have somewhat mildened and the ulcerations have somewhat cleaned, that there is no reactive inflammation, no growth of the connective tissues in the form of cones or granulations, which must be looked upon as preliminary to the commencement of a spontaneous healing process, for the moment there are no indications for surgical interference. In such conditions, with perhaps a high degree of hectic and denutrition, there is not much chance of betterment. But in less advanced and more localized cases, with relatively good general condition and consequently a better prognosis, an energetic removal of the inflammatory products and tubercular deposits will call forth a tendency to healing. The parts operated on begin to suppurate, parts of the tubercle are got rid of in this way, and a regressive metamorphosis disposes of others, the bacilli are floated away and the tension of the tissues is relieved, and granulation and cicatrization are forwarded.

*Ibidem*, No. 37.—Rosenbach of Breslau discusses the question how specifics operate against micro-organisms which have harboured in the body and lighted up certain infectious diseases. They do

so, not because they poison the bacteria, but because the medicament used robs the microbes of the power of reproduction, deteriorates their feeding-ground so much that they cease to multiply and form toxines, and thus lose their unlimited power of causing and maintaining destructive processes in the body to which they have gained admittance. Their reproductive power depends on an unlimited supply of nourishing material. They may remain living, and after a certain time, whether they have preserved their original form or passed into more permanent forms, such as spores, which can exist under most unfavourable outward conditions, they can be inoculated into new nourishing media, and reproduce themselves if the media, like artificial ones, have no active, living protective power; but for the animal and human body they have become temporarily innocuous, and will be, after longer or shorter time, eliminated by the regeneration of the tissues. If the medicament is too weak, or the number of the micro-organisms, in proportion to the regenerative powers of the body, too great, then a relapse occurs, an event which demonstrates most strikingly that the invaders were not slain, but only reduced to a state of sterility, of checked development, and that immediately after the extinction of the operation of the medicament used, they were ready to begin their reproductive process once more.

*Ibidem*, No. 39.—Dr Heller, working in the Rosenthal clinic, recommends urine as a bacteriological culture medium. A definite measure of urine is reduced to a specific gravity of 1010, made weakly alkaline by soda, filtered, and with 1 per cent. pepton,  $\frac{1}{2}$  per cent. chloride of sodium, 5 to 10 per cent. gelatine, or 1 to  $1\frac{1}{2}$  per cent. agar-agar, or if necessary with glycerine, grape sugar, etc., added, boiled and sterilized in tubes. He finds one sterilization sufficient. If thought necessary, the urine pigments may be partly removed by filtration through animal charcoal. All sorts of microbes save tubercle bacillus and gonococcus flourished on this nourishing material, which excels all others in clearness and transparency. Among pathogenic bacteria so cultivated he mentions staphylococcus pyogenes albus and aureus, streptococcus pyogenes, bacillus anthracis, bacillus typhi, bacillus cholerae, bac. diphtheriae. Author thinks that albuminous urine may yet be found equal to blood serum for the cultivation of certain bacteria.

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### OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine; Consulting Physician to the Edinburgh City Hospital for Infectious Disease.

THE NATURE AND TREATMENT OF ECZEMA.—Dr Unna reviews the position of this most interesting question, and, as usual, throws new light on the subject. The standpoint which he takes up is



the parasitic origin of eczema. He first contrasts the earlier opinions as to the influence of micro-organisms on the skin. He shows that it is the strongest proof of the harmlessness of those which occasion the so-called vegetable parasitic diseases that they proliferate profusely. They would not be able to develop insidiously, almost imperceptibly, in the horny tissue if their excretion products exercised any very injurious or irritating effect on the living prickle-layer and cells of the cutis. Where we have to deal with organisms which are much more seriously injurious, we shall not obtain much microscopic evidence of their presence, for the more harmful their effect the fewer are necessary to bring about well-marked signs of irritation, under which the organisms will on their side suffer. In such cases only cultivations on artificial nutritive media can lead to any exact knowledge of the affections of the epidermis. In regard to eczema, the first systematic cultivation experiments have revealed an unexpectedly rich flora in the upper skin. It is scarcely conceivable, he thinks, that this enormous mass of organisms can have no connexion with the etiology of eczema. However justifiable the keenest criticism may be with regard to any single parasite which is claimed to be the true and only cause of a certain affection of the epidermis, it is quite as unjustifiable to maintain a general scepticism against the parasitic nature of these affections in general. *The true and essential cause is the inoculation of the germ*, a germ for the most part, probably, of vegetable nature. Eczema, however, is only produced when the germ proliferates in the epidermis and its appendages. To effect this it is necessary, according to the parasitic theory, that this affected epidermis should be a good nutrient basis; and this condition embraces actually everything which has been previously placed among the various predisposing and exciting causes. External warmth and moisture, simple inflammations, and stases, as well as the whole legion of external irritants, may be described as exciting causes, or better as *accidental improvements of the nutrient base*. That which is common to all the causes which have been discussed in the text-books up to the present time is, *that they can render the skin, and especially the epidermis and the nutritive fluids which penetrate it, favourable to the growth of the specific germs*. Eczema is, in his opinion, a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation. The treatment of chronic eczema divides itself into two heads—(a.) By the use of anti-parasitic measures the germ itself is attacked; this is the *direct treatment*. (b.) On the other hand, by it the epidermis, which is the nutrient soil, becomes less suitable for the growth of the specific germ; this is the *indirect treatment*. In the search for new specifics against the various forms of eczema, their harmlessness for the general organism must be taken into consideration; and with regard to the reducing medicinal agents in particular, it must be noted whether there is an absence of irritating properties in their oxidation products.—*British Journal of Dermatology*, September 1890.

ON THE NATURE OF IMPETIGO AND ECZEMA IMPETIGINOSUM.—Dubreuilh discusses these questions, and concludes that there is but one form of impetigo—impetigo contagiosa—a disease well defined clinically, but which has no etiological individuality, due to the intra-epidermic inoculation of pyogenic microbes derived from any source; and that eczema impetiginosum is an eczema complicated with impetigo, from which it should be separated clinically. While Bockhart and Bousquet have found the staphylococcus pyogenes cereus and albus in the pus from the pustules, Pogge has found a micrococcus which gives rise to a pale brown cultivation which liquefies the gelatine, and thus differs from the other pyogenic microbes. It would seem as if inoculation with any pus may give rise to an impetigo. The propagation of the disease from one point to another occurs always in the same manner, viz., by scratching; hence it is infinitely more frequent on uncovered than on covered parts. The question of soil is another and an important point. It is plain that the same circumstances do not occasion impetigo in all persons; and more, that in addition to the predisposition of the individual, there is also that of certain regions. Puffy children, with fine skins, soft adipose tissue, large eaters, whose deceptive *embonpoint* veils a weak state of health, born of scrofulous parents, sometimes even of those distinctly tuberculous, are incontestably most prone to impetigo, yet it may attack those who are most robust. An allied disease is ecthyma, which only differs from impetigo by the extensive inflammatory zone, red and indurated, which surrounds each pustule; by the pus, sometimes blood-stained; and occasionally by the greater depth of the lesions, which may leave a scar; finally, by the localization. This last distinction rules all the others. In the large majority of cases, impetigo is located on the face, ecthyma on the lower limbs. Eczema impetiginosum is far from having the well-marked physiognomy so characteristic of impetigo contagiosa. It resembles impetigo in its localization on the face, in its predilection for youth, in its purulent secretion, and in the thick and honey-like crusts which form; and these resemblances have induced some authors to maintain that impetigo is but a variety of eczema. A very distinctive point is this, that while impetigo contagiosa is comparatively easy to cure, eczema impetiginosum, on the contrary, is most rebellious. Under the influence of an appropriate treatment the characters are seen to change, the suppuration becomes less copious and less purulent, the crusts thinner, and may even disappear. One finds one's self face to face with an eczema of a simple type, dry, or at least oozing little, and offering all the resistance to treatment of a chronic eczema. The impetigo has been cured, the underlying eczema remains. Thus eczema impetiginosum is a hybrid condition—a chronic eczema on which an impetigo has been grafted. Therefore to cure this one must deal with the eczema, as, unless it is got rid of, the impetiginous crusts will in a short time be infallibly reproduced.—*Annales de Dermatologie et de Syphiligraphie*, April 1890.

THE LICHEN GROUP.—Under this head Dr Finch Noyes of Melbourne discusses the diseases which should be included in this class. It is commonly agreed that only such are really eligible which conform to the definitive “diseases which remain papular throughout their course, never undergoing any further development.” One of those commonly included is lichen circumscriptus, which consists of papules spreading peripherally, so as to form rings with red papular borders and yellowish, greasy-looking centres. It appears chiefly on the front of the chest, and on the back between the scapulæ. As regards this, it is fast becoming a generally recognised fact that it is associated with a morbid state of the glandular apparatus of the skin. Again, lichen scrofulosorum is a mild affection, characterized by the production of minute papules of a yellowish-red or fawn colour, surmounted by a minute scale, situated, as a rule, on the chest or abdomen. The groups of papules are usually oval or circular, the intervening skin being healthy. The papules may, in some instances, become pustular, and this fact excludes the condition from lichen. Lichen pilaris consists of pinhead-sized convex papules, either of the same colour as the surrounding skin, or grayish or blackish from adherent dirt. Each of the papules is formed at the orifice of the hair-follicle, and can be quite picked out by the nail, leaving a depression. It is really a keratosis, and varies somewhat in appearance if inflammation attacks it. Hence it is not a true lichen. Lichen ruber acuminatus was described by Hebra and by Kaposi, and the account given by them has been reproduced many times. At the same time, few recognised the condition. It is now all but universally admitted that it corresponds to the disease which French authors have, since the time of Devergie and Richaud, called pityriasis rubra pilaris. This is a complaint which commences with redness and scaliness of the palms and soles, redness of the face, and pityriasis capitis; then a more or less diffuse erythema develops, upon which appear papules round the hair-follicles, which are nearly wholly formed of horny material. If this horny mass is detached, but little elevation is found beneath; if, however, there is any elevation, it is generally of the same colour as the surrounding skin, sometimes brown, exceptionally red. A very characteristic position is the back of the first and second phalanges, where oval groups of papules are formed. Itching may or may not be present, and the general health is not affected. There thus remains only the lichen planus of Wilson, included by Hebra as one division of his lichen ruber. This is the sole true lichen, and the term lichen ruber is the more expressive.—*Australian Medical Journal*, June 15, 1890.

THE CONNEXION BETWEEN DISORDERS OF THE GENITAL SYSTEM AND SKIN DISEASES.—This has been accepted in the case of acne, of acute circumscribed cutaneous œdema, and sometimes in eczema, but scarcely ever has the association been more fully worked out than in an example of chronic urticaria by Dr Frank of Prague.

In a woman, aged 28, unmarried, urticaria and disorders of the sexual system commenced simultaneously at the age of 25. The symptoms pointed to chronic oophoritis and salpingitis, and the urticaria burst out with greatest intensity at the menstrual periods. The ovaries were completely removed, and the patient made an excellent recovery. The urticaria at once ceased and did not recur. She gained flesh, and all the local symptoms referable to the sexual apparatus vanished. Dr Frank observes,—“It is a known fact that during female sexual life the normal genital functions, as well as the disturbances to which these are liable, exert a notable influence on the development and on the condition of the entire nervous system. As a result of long-continued chronic sexual disorders, from the persistent pain and the emaciation, an altered irritability of the nerves, particularly of those distributed to the vessels, arises. Further, from the circumstance that a reciprocity between the genital system and the skin is easily observed in various physiological and pathological processes, the conclusion is established, that the cutaneous nerves are implicated in these disorders.”—*Zeitschrift für Heilkunde*, p. 107, 1890.

**TRADE ERUPTIONS: THE ECZEMA OF FURNITURE POLISHERS.**—Blaschko states that this eczema, to be recognised from the dusky-brown hue of the finger nails, as a rule extends to the intradigital folds, to the back of the hands, and sometimes even to the forearm. There are frequently on the back of the hands and fingers small isolated scaly patches which itch a little, but from time to time a very irritable, acute papular or papulo-vesicular of the same parts, and even of the upper arm, may manifest itself. More rarely does it weep. As a rule, a scaly eczema succeeds the papular, with fissures on the hands and fingers. This may get well in two or three weeks, or may develop into a condition which may last for months, healing in one part, extending in another, and eventually may spread over the whole body, so that parts never in contact with the varnish are attacked. The treatment is that for ordinary eczema; but Lassar's paste, with 20 per cent. of balsam of Peru, has proved of much service. For the very dry forms he prefers the unguentum vaselini plumbicum; in the later stages tar soaps, tar-zinc pastes, or oleum rusci dissolved in benzol. He thinks the pyridin in the varnish is the cause.—*Deutsch. Med. Wochens.*, No. 22, 1890.

**TEA A CAUSE OF COLD FEET.**—Mr Hutchinson says,—“I advised a lady to drink more tea. ‘I cannot touch it,’ was her reply. ‘Why; what does it do to you?’ ‘It makes my feet icy-cold, and wet with cold perspiration.’ On further inquiry, she assured me that she was quite certain of her facts, and had often tested them. She thought that the perspiration was usually of the soles chiefly. Her hands were, she thought, also made cold, but not so definitely as her feet. I had long been familiar with the fact that tea made the feet cold, but did not know that cold perspiration attended it.



It does not do so in all persons. The coldness is caused, I believe, by contraction of the arteries, for the feet at the same time shrink. Alcohol has usually a precisely opposite effect.”—*Archives of Surgery*, July 1890.

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## PERISCOPE OF PUBLIC HEALTH.

By HARVEY LITTLEJOHN, M.A., M.B., B.Sc. (Publ. Health), F.R.C.S.E.

THE BEARING OF SCHOOL ATTENDANCE ON THE SPREAD OF INFECTIOUS DISEASE.—This is the title of a paper read by Dr Newsholme at the Sanitary Congress held at Brighton recently. He thinks the tendency of schools to increase the spread of infectious disease has been exaggerated in the popular mind, and even in the minds of many sanitarians; but, on the other hand, he thinks it would be a serious error to suppose that schools may not have a great influence for evil. He sums up an admirable paper with the following conclusions as to how the danger of infection in connexion with school life may be reduced to a minimum:—1. The compulsory notification of measles and whooping-cough, as well as scarlet fever and diphtheria. 2. The complete isolation of infectious cases, and the quarantine of children in infected houses. 3. That whooping-cough in a house should be no exception to the rule, but should preclude children of the same house from attending infant schools. 4. That the medical officer of health should give prompt and direct intimation to the head teacher of any case of infectious disease occurring among his scholars, and instruct him as to the duration of the infective period. 5. That teachers should be strictly forbidden to send children to inquire the cause of absence of absentees, and that a special officer should be appointed for each school to visit such absentees.

DEALING with the same subject, the Préfet of the Rhone, struck by the insufficient powers possessed in his department for dealing with infectious diseases in relation to public schools, has issued a series of regulations on the subject. Among others the following are of interest:—“All children living in the same house with a person affected with an infectious disease are prohibited from attending school during the whole course of the disease and convalescence.” “When a pupil of a free, public, or infant school is attacked by an infectious disease, the authorities must notify the fact to the teacher at once. The patient shall not be readmitted to the school until after *complete* convalescence in the case of whooping-cough, and until after a period of at least fifty days in cases of diphtheria, forty days in cases of scarlet fever and small-pox, and twenty-five days in cases of measles.” “When a child is absent from school on account of illness, and the teacher has not been notified by the authorities, then the teacher must at once inform the authorities of the fact.” “When a child has been

absent more than a week from school from an unknown cause, a certificate must be produced on its return, stating that the child has not been affected with any infectious disease." "In fatal cases of infectious disease, but especially of diphtheria, small-pox, scarlet fever, and measles, children are not to be allowed to enter the room of the deceased on the day of the funeral, or to help to carry the coffin and floral wreaths."—*Le Progrès Médical*, Sept. 20.

**ADULTERATION OF MILK.**—Perron has drawn attention to the adulteration of milk with oil, which is emulsified by means of borax or yolk of egg, and does not produce any effect on the taste of the milk. The addition of this emulsion gives "body" and conceals the addition of water. The mixture of a pure tasteless oil of low specific gravity, emulsified with yolk of egg, effectually conceals the fact of milk having been skimmed.—*Vierteljahr. d. Chemie der Nahrungs und Genussmittel*.

**CEREBRO-SPINAL FEVER.**—This disease causes annually between 400 and 500 deaths in the State of New York. In 1889 there were 400 cases distributed over less than 100 localities, and including 20 out of the 30 cities of the State. It is a remarkable fact that although New York reports deaths from cerebro-spinal fever every month in the year, not one is reported from Brooklyn. In fact, since 1884 there has been but a single death reported from this cause in Brooklyn. By statistics it is shown to be a disease occurring at all times of the year, its greatest prevalence being in the spring months, and the least prevalence during the summer. The uniformity of its existence is noteworthy. No other disease is so constantly present, as shown by its mortality. Another notable fact is the steadiness with which it clings to a locality in which it has become settled. In New York, Buffalo, and Troy it is endemic, while in other towns it has occurred in an epidemic manner. As to the causation of the disease, nothing very definite is known. A morbid principle seems to inhere in the locality affected, but what the conditions are which favour this inherence is not known. It clings to large cities, and with equal persistence to rural villages. A high level of the ground-water has been observed to exist in districts chiefly affected, and therefore it is proposed, as a remedial measure, that such places ought to be drained. The co-existent prevalence of pneumonia with cerebro-spinal fever, two diseases frequently associated, could not be recorded.—*10th Annual Report, New York State Board of Health*.

**DISINFECTION OF DWELLINGS.**—At a meeting of the German Public Health Society, held at Brunswick in September, Professor Gaffky of Giessen read a paper on the disinfection of dwelling-houses. He held that the disinfection ought not to be left to the householder, but must be undertaken by specially trained and competent men, superintended by a medical officer. The expense

ought to be borne by the authorities. Professor Gaffky thinks the best method of disinfection consists in rubbing down the walls with bread after having thoroughly applied to them a 4% carbolic acid solution.—*Münchener Med. Wochenschrift*.

FLESH OF TUBERCULAR ANIMALS.—Dr Hope, in a paper read before the Liverpool Medical Institution on Tuberculosis in Cattle, quotes the law in Prussia and in France as to the sale of meat from tubercular animals. In Prussia the law runs—"The condition of the flesh of a tubercular animal is to be regarded as dangerous to health when the meat contains tubercular nodules, or the tubercular animal has begun to show signs of emaciation; while, on the other hand, the meat is to be regarded as fit for human food when the masses of tubercle only occur in an organ, and in general the beast is well nourished." The French decree says—"The flesh of tubercular animals shall be excluded from consumption. (1.) If lesions are generalized, that is to say not confined. (2.) If the lesions although localized have invaded the greater part of an organ, or are manifested by an eruption on the walls of the chest or abdominal cavity."

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### SURGICAL PERISCOPE.

By KENNETH M. DOUGLAS, M.D., F.R.C.S. Edin.

EARLY PROSTATIC TROUBLE: PREVENTION AND TREATMENT.—Mr Reginald Harrison believes mechanical treatment should be practised earlier than is usually done, but that bougies should be made use of rather than catheters as a rule, and preferably his *bougies à ventre*. The reason for this preference is that bougies do not interfere with the residual urine, but so modify the form of the bladder outlet as to render residual urine unnecessary.—*The Medical Press and Circular*, June 14, 1890.

ELECTROLYSIS IN RECTAL STRICTURE.—Dr Newman of New York advocates this procedure, and comes to the following conclusions:—1. Electrolysis in the treatment of stricture of the rectum is not a panacea; on the contrary, failures may happen, and probably will ultimately fail if the stricture is due to carcinoma. 2. Electrolysis will give improvement to the rectal stricture when all other means have failed. 3. Electrolysis will cure a certain percentage of cases, without relapse, better than other modes of treatment, and without the necessity of an after-treatment or using bougies. 4. The best chances for a cure are with the fibrous inflammatory strictures. 5. The best mode of treatment is by a metallic bulb as negative, weak currents, and intervals of four days to two weeks. (Further experience in time may change this rule.)—*Journal of the American Medical Association*, May 17, 1890.

**RESECTION OF THE CÆCUM.**—Dr Senn of Milwaukee records two cases in which he removed the cæcum for malignant disease, and restored the continuity of the bowel by ileo-colostomy by approximation plates of decalcified bone. The resected ends, having been invaginated and closed by a few points of suture, are incised two or three inches from the end, on the convexity of the gut. Two decalcified bone-plates of oval form, and with a central opening, are introduced into these incisions, already threaded, so that when the two needles which are attached to each are passed through the wall of the gut from within outwards, and the stitches thus introduced tied and tightened, the plates are drawn together, and the serous surfaces of the two portions of bowel are held in close apposition between them (*these surfaces being previously scarified*), care being taken to exert no undue pressure. The union is reinforced by two rows of Lembert suture—one at either edge of the plates. The advantages of the method, in Dr Senn's opinion, are the ease and rapidity with which it may be executed, and the fact that it is possible when the removal of the diseased parts is inadmissible.—*Journal of the American Medical Association*, June 14, 1890.

DR DAVIS of Birmingham, Alabama, prefers catgut plates or "mats" to bone, and denudes rather than scarifies the bowel surfaces, before approximating them. This, he says, accelerates union. This preference he supports by a series of experimental observations.—*The Times and Register*, January 25, 1890.

**EARLY DIAGNOSIS OF KIDNEY TUMOURS.**—M. Guyon believes that surgical intervention is indicated, both for diagnosis and treatment, when characteristic hæmaturia and pain distinctly localized in one or other loin are met with, and in his opinion the time when the tumour is perceived must not be waited for. The cystoscope, though of service, is a defective means of diagnosis in his experience, and fails to declare which is the affected kidney. *Periodic* microscopic examination of the urine is needful before deciding that hæmaturia is absent.—*Annales des Maladies des Organes Genito-urinaires*, Paris, June 1890.

**LEITER'S URETHROSCOPE IN THE TREATMENT OF CHRONIC URETHRAL DISCHARGES.**—Dr Dearer has found in these cases that the instrument does good service, and enables him to differentiate three varieties of chronic urethritis, viz., simple, follicular, and ulcerative.—*Medical Record*, June 7, 1890.

**REMOVAL OF APPENDIX VERMIFORMIS DURING INTERVALS OF RECURRENT ATTACKS OF APPENDICITIS.**—Dr Dennis of New York regards this as a procedure to be resorted to but rarely, and on very special indications. He argues that excision of the appendix has to do with only about 11 per cent. of the cases of appendicitis, for 89 per cent. of the cases are not relapsing, and therefore do not belong to the class of cases in which removal is indicated. Of the



11 per cent. a majority recover, because perforation is the exception rather than the rule. Some undergo suppuration and heal. Of the few cases exposed to the danger of perforation and general peritonitis some recover, as is shown by a reference to cases mentioned. Dr Dennis also urges against the routine use of the operation the high death-rate as compared with that attending early incision *during* an attack of appendicitis, the possible failure to find the appendix, the difficulty of diagnosis, and the fact that, as a result of relapsing appendicitis, cure may occur by occlusion or isolation of the appendix from inflammatory new formation or otherwise. He would, therefore, condemn the operation during the quiescent stage.—*The Medical News*, June 28, 1890.

STRICTURE OF THE URETHRA AND CHRONIC PROSTATITIS ATTENDED BY INTERESTING REFLEX SYMPTOMS.—Dr Thomas R. Neilson reports two cases of this nature. In one case (patient aged 24) a tickling in the throat and laryngeal cough occurred simultaneously with attacks of scalding pain on micturition and itching about the genital organs. The symptoms all ceased when, by the use of bougies and other local treatment, the stricture and prostatitis were cured. In the second case (patient aged 23) the reflex phenomena consisted in pain near the first metatarso-phalangeal joint. Treatment by bougies and a sedative mixture brought about great improvement, but neglect of their use has caused the sensations to return.—*The Medical News*, June 28, 1890.

CHRONIC OSTEOMYELITIS OCCURRING IN AN ADULT AFTER CARBUNCLE.—M. P. Berger opened a central abscess of the femur due to chronic osteomyelitis in an adult patient just recovering from a large carbuncle on the nape of the neck. The staphylococcus pyogenes aureus was found in the pus of the abscess, and this is regarded as further proof of the close relation which osteomyelitis bears to anthrax, as Pasteur, Verneuil, and Lannelongue have shown.—*Revue de Thérapeutique*, Paris, August 15, 1890.

INGUINAL CYSTOCELE.—Dr Hedrich records a case illustrating this condition.—*Gazette Médicale de Strasburg*, 1st June 1890.

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## Part Fifth.

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### MEDICAL NEWS.

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ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the final examination for the Triple Qualification held in October 1890, the following persons passed successfully, and were admitted L.R.C.P. and S.E., and L.F.P. and S.G.:—Willie Eustace Merle Wright, Bangalore; Wm. Johnson, Dublin; Alex. Wallace, Ballymena; Thos. Joseph Talbot, County Dublin; Huntly Nevins Pelly, New Brighton; John Charles Mockler, Portadown; Samuel Taite Beckett, Liverpool; Joseph Wilson, Newry; Hope Wellis, India; Douglas Dixon Dryden, Plymouth; Llewelyn Roberts, Conway; Mary Louisa Gordon, Liverpool; John Sinclair Robson, County Derry; Michael Crannitch,

Ballyshane; Lilian Violet Cooper, Kent; George Arthur Ings, Canada; George Wright, Canada; Emery Norbert Féré, Canada; David Archer, Toronto; Catherine Mary Wickham, Dublin; Edward Smyth Leyburne, County Carlow; Paul Madden Sheedy, County Cork; Joseph Ryan, Limerick; James Murphy, Limerick; Robert Emmerson Brown, Durham; Arthur Edward Syme, Melbourne; Satlur Vadanta Ramaswamy Iyengar, Mysore; Thomas Nicholas Stuart, South Africa; Alexander John Murchison, Canada; Frederick Edward Rainsford, Ballinasloe; Alexander M'Cune, Kilwinning; John Alexander M'Donald, County Cork; Ernest Victor Eames, Donegal; James Henry Peet, County Kerry; George Robertson, Leslie; Frederick William Marshall, Staffordshire; Adam Daniel Conner Meade, County Cork; Charles Peiltain Formby Baillien, Victoria; Thomas Joseph Frost, County Clare; Thomas Peter Grosart Wells, Blackburn; James Turner Rogers, Canada; Henry Muirhead Walker, Dublin; Daniel Horan, Kerry; James Cross, Hodsack, Nottingham; George Fogg, Newcastle-on-Tyne; and Robert Lee Moore, Belfast.

FINAL M.B., C.M. EXAMINATION AT EDINBURGH UNIVERSITY.—The special examination for the final M.B., C.M. was held at Edinburgh University on the 14th and 15th October 1890. The following are the names of the successful candidates:—T. S. Adair, J. C. Allan, R. M. Beattie, W. H. H. Bennett, W. A. Black, W. C. Black, W. H. Boazman, W. Bower, P. H. Boyden, J. C. Cowan, W. Currie, M.A.; W. Carmichael, B. A. Dalison, A. J. Dearden, D. S. Disson, A. Dott, D. G. Douglas, S. Elliot, R. A. Fryer, D. H. M. Graves, E. Innes, A. E. S. Jack, G. B. Jameson, C. B. Kerr, T. Knowles, P. M. Kyle, T. Lawson, R. E. Little, W. F. C. Lowson, J. D. L. Macalister, A. G. Macdonald, H. V. Mackenzie, G. S. Mansfield, F. M. Marshall, A. S. Miller, A. E. Mole, R. W. C. Norman, J. S. M. Nurse, J. Panton, E. V. Roberts, A. F. Rutherford, W. Sanson, W. J. Shaw, F. M. T. Skae, G. C. Rowe, R. S. Stephenson, A. N. J. Storey, R. Strachan, R. Sturges-White, A. E. Taylor, P. Thornton, F. P. French, T. W. Wilson, W. Wood, and J. B. Young.

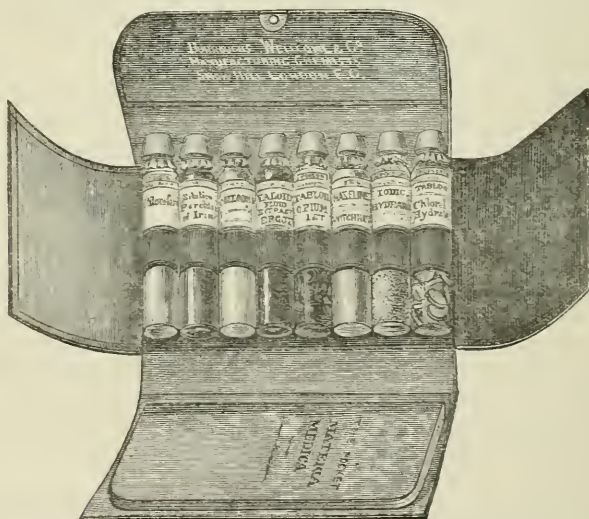
MEDICAL APPOINTMENT.—Miss Jane B. Henderson, L.R.C.P. and L.R.C.S. Ed., has been appointed Resident Clinical Assistant on the ladies' side of the Holloway Sanatorium, Hospital for the Insane, Virginia Water.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—At the first meeting for the session, held on the evening of the 3rd ult., the following gentlemen were elected office-bearers for session 1890-91:—*President*, Dr William Macewen. *Section of Medicine*:—*Vice-President*, Dr S. Gemmell; *Councillors*, Dr W. G. Dun and Dr Robert Pollok; *Secretary*, Dr Geo. S. Middleton. *Section of Surgery*:—*Vice-President*, Dr Hector C. Cameron; *Councillors*, Dr J. C. Renton and Dr James Paton; *Secretary*, Dr John Barlow. *Section of Pathology*:—*Vice-President*, Dr W. T. Gairdner; *Councillors*, Dr Joseph Coats and Dr A. Milroy; *Secretary*, Dr T. K. Dalziel. *Section of Obstetrics*:—*Vice-President*, Dr W. L. Reid; *Councillors*, Dr Samuel Sloan and Dr J. K. Kelly; *Secretary*, Dr Lawrence Oliphant. *Treasurer*, Mr Henry E. Clark; *General Secretary*, Dr Walker Downie.

INOCULATION IN THE FUTURE.—A writer in the *Hospital* says: "It is a dreadful point about these microbes that the only way to avoid having them in a virulent form is to have them in an artificial or attenuated form. The children of the future will not run through the present gamut of infantile disease, but they will probably be subjected to inoculation with various microbes every few months. First, they will be vaccinated for small-pox; when

they have recovered from that they will be taken to a Pasteur Institute to have a mild form of rabies. Next, they will be given a dose of the comma bacilli to prevent cholera, and so on through all the ever-growing series of disease microbes. Oh! luckless child of the future! you will never be ill and never be well; your health will be awfully monotonous; you will never know the weariness of the first night of measles, when it was so nice to lie in mother's lap and feel her cool hand on your forehead; you will never know the joys of convalescence, when oranges were numerous, and every one was kind to you because you were not well; and your end will be to die of debility. How glad we are that we live in the present, with all its ups and downs of health to lend variety to life and death.

MESSRS BURROUGHS, WELLCOME, & Co., of Snow Hill Buildings, London, E.C., have sent us a couple of their beautiful Photographic Souvenirs of the recent Congress at Birmingham of the British Medical Association. They are from the well-known Valentine Studio, Dundee, and represent Kenilworth Castle and Ann Hathaway's Cottage, Stratford. Both are charmingly picturesque, especially the latter; and if any member of the profession would like to have one, he has only to apply to the eminent chemists above named, and his wish will be gratified.



The above illustration represents Messrs Burroughs, Wellcome, & Co.'s very handy morocco case of such drugs as Obstetricians frequently find useful in the course of their practice. When closed, it is only 6 inches long, 4 inches wide, and 1½ inch thick.

# Part First.

## ORIGINAL COMMUNICATIONS.

### I.—NOTE ON THE TREATMENT OF SEVERE SENILE ENTROPION.

By D. ARGYLL ROBERTSON, M.D., F.R.C.S.E., Surgeon-Oculist in Ordinary to the Queen in Scotland, Ophthalmic Surgeon to the Edinburgh Royal Infirmary, Lecturer on Diseases of the Eye, University of Edinburgh.

VERY numerous are the operative measures that have been recommended for the cure of entropion. Surgery has almost surpassed itself in the variety of suggestion to meet the various conditions that require to be overcome in the cure of certain forms of the disorder.

While in many cases the simple removal of an elliptical fold of skin, or the introduction of sutures to cause puckering of the skin, may suffice to remedy the inversion of the lid, in others more elaborate procedures are necessary to obtain a successful result. Thus in some, grooving of the tarsal cartilage to undo the incurving, or the application of ligatures so as to alter the curvature of the lid, may produce the desired effect; while in others, transplantation of the eyelashes, or the interposition of a strip of mucous membrane from the lip, or a band of skin from the lid between the eyelashes and the free edge of the tarsal cartilage, may be best adapted to accomplish a cure.

The obvious deduction from such an array of operative measures (and the list is by no means complete) is that no one method is found satisfactory in its application to all cases of the disease; or, in other words, that some condition exists in certain forms of entropion which interferes with the successful result of methods of treatment serviceable in others. There can, I think, be little doubt that an uncorrected abnormality of curvature of the tarsal cartilage is the most common cause of failure. In the cicatricial variety of entropion the existence of an increased inward curvature of the cartilage is well recognised, but it is not so generally understood that in *senile* entropion a similar condition may exist. I am, however, inclined to believe that in obstinate long-continued cases of senile entropion the edge of the lower lid is shortened and the cartilage curved inwards. This is what one would naturally expect to occur, the structures of the lid adapting themselves to their altered position—the free edge of the lid



occupying a straighter line from outer to inner canthus than when it curves round the surface of the globe, becomes adapted to its new position by shrinkage, while the cartilage being kept bent inwards assumes naturally an increased curvature. Thus it happens that the simpler methods of operating that suffice in the milder cases may fail in the more chronic and severe.

As an illustration of these facts I append the following case:—

Mr J., a hale old gentleman of 74, consulted me on the 3rd of March 1884 on account of irritation and watering of both eyes, with defective sight. These symptoms were readily accounted for by an inverted state of both lower lids, the free edges of which with the eyelashes were buried in the inferior oculo-palpebral fold of conjunctiva. The corneæ were a little hazy at their lower margins, the conjunctiva was inflamed, and there was increased lachrymal and mucous secretion. His eyes were naturally deep sunk in the orbits, while there were redundant folds of skin in the lids, conditions which much predisposed to the occurrence of the entropion. As the inversion appeared not to have been of very long duration, I anticipated that the removal of elliptical folds of the redundant skin would be sufficient to produce a radical cure by replacing the edges of the lids—which accordingly I recommended. Three days later the operation was performed, considerable folds of skin being removed from both lower lids, and the edges of the wounds brought together by carbolized catgut sutures. The immediate effect of the operation was most satisfactory, but I understand the entropion very soon returned.

I did not see Mr J. again until October 8th, 1889, when I found both lower lids completely inverted. I recommended that another operation should be submitted to, but this proposal was temporarily declined, until the irritation present in the eyes should have somewhat subsided. In the meantime all the eyelashes of the lower lids were periodically pulled out, with very considerable relief.

On June 22nd, 1890, Mr J. submitted to another operation. On this occasion von Graefe's method was adopted—in which a triangular portion of skin (base upwards) is removed, and the lateral edges of the resulting gap united by sutures, with the object of stretching the skin over the attached border of the tarsal cartilage so as to tilt out the free margin of the lid. The operation, which was rendered somewhat less painful by the subcutaneous injection of cocain, was borne with remarkable fortitude. The stitches, which were of horse-hair, were removed in five days, and the edges of the lids were in good position. A few days later, however, the entropion once more manifested itself.

Although disappointed with the result of these operations, Mr J., actuated by a strong desire to be able to read and write with comfort, made up his mind to have another effort made to effect a radical cure, and accordingly on the 5th of October last I operated once more by injecting cocain and then dividing the whole thickness

of the lid by a vertical incision, about 4 mm. from the outer canthus. The incision was carried through the whole extent of the lower lid. The edges of the incision at once sprung apart, and the lid was readily replaced into its natural position. To prevent recurrence of inversion a horizontal elliptical fold of skin was removed. Both lower lids were treated in this way. Horse-hair sutures were applied to the horizontal wounds, but the vertical incisions were allowed to heal by granulation.

Two days later there was a slight inversion of the inner extremity of the right lower lid, to remedy which an additional small fold of skin was removed.

On the 10th of October the lids were found in their proper position and the stitches were removed. A shallow notch in the edge of the lid indicated the position of the vertical incision, causing a scarcely perceptible disfigurement.

Since then the corneæ have steadily cleared, and the injection and discharge almost entirely disappeared; the edges of the lids are in perfect position, and now (Nov. 11th) careful examination is necessary to reveal the situations of the incisions.

In the foregoing case the persistent recurrence of the entropion after operations that frequently suffice to effect a radical cure can only be explained by an abnormal curvature of the cartilage, the existence of which condition was further evinced by the springing apart of the edges of the vertical incision.

The operation I performed is very similar to one introduced nearly twenty years ago by Stellwag von Carion, which has, however, scarcely been adopted in this country. I have somewhat modified the procedure recommended by him, by making the incision through the lid vertical instead of slanting, and at a short distance from instead of near the outer canthus, by which slight alterations I believe a greater effect is obtained.

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## II.—DREAMING.

By A. W. MACFARLANE, M.D., F.R.C.P. Edin. ; Examiner in Forensic Medicine in the University of Glasgow.

### PART I.

DREAMING has been the source of much interest from the most remote times. Indeed, there is perhaps no subject that has been studied so long and continuously from so many different standpoints. Theologians, metaphysicians, and physicians form a minority of those who have attempted to invade its mystery, and to unravel its nature and essence; so far, their efforts have been attended with but comparatively little success. Dreams were early relegated to the realm of superstition, and they have not yet been completely rescued from that widespread domain.

Primitive races, with their highest cerebral centres as yet im-

perfectly developed by education, lived necessarily under the dominion of their emotions rather than of their will. When they dreamed of friends and ancestors long since dead, they failed to distinguish between things real and visionary. Hence dreams had for them a real existence, and they were as much, if not more, influenced by them as they were by the events of their daily lives. Ancient history teems with facts which show how largely their conduct was biassed by their dreams. Perplexed by occurrences they could neither fathom nor comprehend, they were overawed, and so grew imaginative and superstitious, as many still remain at the present day. Thus, a widespread belief in the mysticism of dreams sprang up, and it still pervades the whole world. Instigated by curiosity, and stimulated by an ambition to penetrate the obscurity that enshrouded dreams, they gradually formulated speculative theories regarding them; and it is curious to note that similar conclusions were arrived at independently by peoples separated by vast oceans and continents—by races living under the most diverse conditions.

No attempt will be made to mention the innumerable explanations that were advanced regarding dreams in the early times,—explanations that may be studied at the present day, by becoming acquainted with the beliefs that exist amongst savage and other races. It being marvellous how little these have become modified amongst those whose cerebral structures are still in a rudimentary state. Reference will be made to three only. Many supposed that during sleep the spirit or soul left the body to roam amidst new and distant scenes, and that dreams were simply the records of these experiences. Lucretius, for example, thought that the soul could be subdivided, and that, as during sleep, a mere fragment sufficed to keep the body alive, the greater portion was free to leave the body and to perigrate as it chose.<sup>1</sup> This doubtless arose from the belief that was prevalent that the body and soul were complementary to each other, and that when the body was apparently lifeless in sleep it had been deserted by the soul. Another class conjectured that some new spirit entered the body, and that dreams were induced by its presence and workings. Plato's hypothesis was, that the air and earth abounded in good and evil spirits, and if one of these invaded a body during sleep, dreams pleasant or the reverse resulted. Pythagoras, one of the pioneers of scientific medicine, and who held a similar view, thought that they could enter into animals as well as men. Yet another section surmised that dreams were messages transmitted directly from the Almighty, and they believed them to be either symbolical or

<sup>1</sup> The conception of the soul differs in various races. The Japanese believe it to resemble a black ball, and it is deemed dangerous to wake a sleeping person, lest the soul should not have returned. The Greeks thought it like a butterfly. The Celtic races (according to Hugh Miller) believed that it took the form of a humble bee. Mr J. G. Fraser has discussed this subject most ably in *The Golden Bough*.

premonitory of coming events. This led to the conviction, that dreams were predictions requiring interpretation. It was a natural inference when the events occurred that the dreams foreshadowed, and one that appealed strongly to the minds of credulous people. It therefore became customary to resort to the learned to obtain an explanation of dreams whenever a satisfactory one did not suggest itself. Thus, Pharaoh summoned Joseph (who appears to have held the office of dream-interpreter to the Egyptian Court) to explain his dream. Interpreters were supposed to possess supernatural gifts. In some instances the high priest or a sagacious physician was consulted, in others the Magi. These latter sometimes sought to obtain special knowledge of dreams by such means as wearing the skin of an animal they had sacrificed to an idol, and by sleeping in a temple or under the shade of a sacred tree.<sup>1</sup> Orientals, who were fond of allegories, were particularly fascinated by dream interpretation. Amongst the Egyptians and Babylonians it became a department of occult art. Amphictyon of Athens was greatly famed for his skill in oneiromancy; but Artemidorus of Ephesus, who flourished early in the second century, is credited with raising the occupation into a science.<sup>2</sup> This seer wrote a book on the subject, in which he embodied the opinions of Hippocrates, Aristotle, and other savants. So widely were dreams believed to be omens, that the Talmud (which describes sleep as the sixteenth of death, and dreams as the sixteenth of prophecy) contains rules for their explanation; while Moses found it requisite to impose a penalty upon those who wickedly invented false dreams.

At the present day superstition still holds sway. There are many works treating upon dream interpretation, which are far more

<sup>1</sup> Virgil wrote,—“In the midst a gloomy elm displays its boughs and aged arms, which seat vain dreams are commonly said to haunt, and under every leaf they dwell.”—*Æn.*, vi. (Davidson’s Translation). It is curious to notice the different means adopted to gain a special insight into dreams. Cockayne writes,—“The Magi had a special admiration for the mole; if any one swallowed its heart palpitating and fresh, he would become at once an expert in divination.” In Ireland, such information was sought for by sleeping upon cairns or tumuli; and in that country it was not uncommon to seek restoration to health by sacrificing an animal and wearing its skin.

<sup>2</sup> The following, which contains the last sentences of an advertisement, dated October 1712 (*Spectator*), is probably a good specimen of the wiles of one of the more recent of the craft. It, doubtless, would be efficacious in attracting flocks of credulous people, almost equal in number to that forming the swarm of bees through whose instrumentality the Cave of Trophonius was discovered:—“I interpret to the poor for nothing, on condition that their names may be inserted in public advertisements, to attest the truth of such of my interpretations. As for people of quality or others who are indisposed, and do not care to come in person, I can interpret their dreams by seeing their water. I set aside one day in the week for lovers; and interpret by the great for any Gentlewoman who is turned of sixty, after the rate of half a Crown *per* week, with the usual allowances for good luck. I have several rooms and apartments fitted up, at reasonable rates, for such as have not conveniences for dreaming at their own homes.—*Titus Trophonius.*”



widely consulted surreptitiously than is supposed. Diverse customs prevail amongst different races. Some (*e.g.*, the Japanese) construe their dreams by contraries; others (as the Australian aborigines) interpret them literally; while some tribes (like the Wanyóro) make no attempt to solve them at all. Probably all uncivilized peoples, and some civilized also, endure much misery and anxiety after a terrifying or ominous dream,<sup>1</sup> for the illiterate dread the unknown. Many strange beliefs have existed concerning dreams. It was not unusual for persons labouring under disease to sleep in the temples in the hope of having Divine dreams, which were credited with highly curative properties. It was thought possible to determine the sex of children before their birth by means of dreams. Many practices still prevail for the purpose of rendering dreams "lucky," and for obviating the consequences of "bad" dreams. Sacrifices, to appease the invisible, are in many cases freely offered. It is said that dreams, like sterility in women, cost many pigs their lives amongst the Dyaks. Other tribes slaughter fowls and sheep, while the Arymara Indians pour chicha and brandy on the ground. The Chinese avoid all reference to their dreams before breakfast, and the Japanese until they have rinsed the mouth with water, and spat it out while facing the east.

It redounds to the fame of Hippocrates, brilliant as that is, that he attempted to wrest dreams from the realm of superstition, and, by regarding them from a medical point of view, to explain them on rational grounds. Imbued with the importance of the subject, he contended that particular classes of dreams should be studied with reference to the special diseases they preluded and accompanied. He expressed the opinion that "whoever then knows how to judge of all these correctly will find in it a great part of wisdom." The investigation he advocated was at once arduous and difficult, but he gained much of his own knowledge, masterly and accurate, by like patient and laborious methods. It is said that he added to his erudition by "reading the tablets in the temples of the gods, where each individual had written down the disease under which he had laboured, and the means by which he had recovered." The philosophers Democrites and Aristotle, recognising the association between dreams and bodily diseases and mental disorders, both urged a similar study. They possessed, in common with the early physicians, larger opportunities of hearing dreams in detail than pertains at present. Nowadays it is customary to follow too closely the advice of Epictetus, a Stoic philosopher of Hieropolis, who counselled that dreams should not be related, as, however much interest they might have for the dreamers, they possessed none for listeners. Galen, following in the footsteps of

<sup>1</sup> It is recorded that the Sabinda greatly dread dreams. A dreamer is kept in great uneasiness for several days after a dream. This race abstain as religiously from bathing as they do from eating fowl, because their ancestors were warned in dreams that if they bathed tempests would visit them.

Hippocrates, advocated the expediency of minutely investigating dreams, that they might be utilized for the advancement of medical science. He probably took an exceptional interest in dreams, as he believed that he had gained much of his experience from his own.<sup>1</sup> Unfortunately, the advice of these skilful and sagacious pioneers has been neglected, so that even now dreams are so little understood as to be of comparatively small value in diagnosis. Happily, however, oneirocriticism, like fortune-speying, is a profession of the past, and dreams are well within the pale of scientific inquiry.

These preliminary remarks may be fitly concluded by referring for an instant to those dreams which appear to herald future events. They constantly seem to occur. A good and early example is to be found in a dream that occurred to Calphurnia, the wife of Julius Caesar, the night before her husband's murder. She dreamed "that the roof of the house had fallen, and that he had been stabbed in her arms; and on that account she attempted, but in vain, to detain him at home." It has been attempted to explain such dreams on the theory of coincidences. Aristotle, who was favourably inclined to the hypothesis, sagaciously said that he could not readily "either despise the evidence or be convinced by it." Sir Walter Scott thought that these dreams could be thus accounted for, and he wrote,—“Considering the many thousands of dreams which must night after night pass through the imagination of individuals, the number of coincidences between the vision and the real event is fewer and less remarkable than a fair calculation of chances would warrant us to suspect.” No one can fail to fully appreciate the wide-reaching nature of coincidence. In medical practice the development of herpes zoster, or some rare form of spinal disease, simultaneously in a man and his wife, or of the occurrence of pyelitis in a father, mother, and wife, can be only so explained. I think, however, that it falls short of accounting for all such dreams. There may be a supernatural element in dreams.<sup>2</sup> Accustomed as we are to derive our knowledge through the aid of our senses, we are apt to doubt the existence of forces which do not appeal to us through these channels, and we are prone to discredit what we cannot comprehend. In this instance, therefore, I elect to follow the example of Sir Thomas Hope of Craighall, who wrote in 1644,—“But I nather trust nor fear them, but waites on God, and observes or notes the samyn, that I may compare them with Providence, as the Lord sall pleis to mak the event appeir.”

<sup>1</sup> It is recorded that—“When Galen had an inflammation above the diaphragm he was admonished in his sleep, that if he wished to be freed from it, he should forthwith open that vein which was most apparent between the thumb and the forefinger, and take a quantity of blood from thence; he did as he was advised, and was perfectly restored to his former health.”

<sup>2</sup> M. Forney thought that supernatural dreams could be distinguished by their not being initiated by a sensation, and by their not being guided by the usual laws of imagination. Veritably a fine diagnosis.

I propose to consider dreaming from a physiological and pathological standpoint, and as it forms the nexus between the waking and sleeping states, it will be advantageous to review briefly some of the phenomena which characterize these opposite conditions.

When we are awake, in health, our mental faculties, and particularly our highest faculties, are unceasingly vigilant. Mental operations belong to a spiritual or immaterial world—one separated by a wide and unbridged gulf from that of material processes. Nevertheless they cannot manifest themselves except through the agency of the brain. Consciousness of external things can alone be aroused by impressions transmitted to the nervous structures of the brain (themselves insensitive) becoming converted into sensations and ideas through the agency of the mind. The manner in which this intercommunication between mind and matter and matter and mind takes place is unknown, and the link that unites them has been aptly described as “unthinkable.” It is a vital process that admits of no material explanation.

Mental operations vary vastly in their nature and extent. Their diversity and complexity being almost inconceivable, yet each and every particular description of mental work is dependent upon special centres in the cerebral cortex for its due performance. The multitudinous congeries of centres possess the most varied functions, but they communicate one with another, and with the special sensory and motor areas, by means of elaborate arrangements, to enable them to co-operate in a correlated manner. The study of every individual bodily function shows that it is dominated by special nervous centres and arrangements. In connexion with the special senses and muscular movements, it has been definitely ascertained that the power of recognising various delicate gradations of sensory stimuli, and of executing minute and complex movements, is rendered possible by special dominating centres in the anatomical sites known as the sensory and motor areas. Arguing by analogy, it may be fairly urged that an infinite number of psychical centres exist. Although the psychical areas have not yet been anatomically differentiated, their definite existence can scarcely be questioned. They embrace intellectual, emotional, and volitional centres. Thought, emotion, and volition excite activity in these centres,<sup>1</sup> just as molecular activity in them gives rise to distinct metaphysical phenomena. The one is subservient to the other. The highest centres, those which function consciousness, and which dominate and inhibit subordinate centres, cannot abdicate their functions while we are awake, so they require repose far more urgently than any of the others, which may rest partially by day. This they can only obtain in sleep.

<sup>1</sup> The intellectual, emotional, and volitional faculties are disturbed and perverted when the brain textures are poisoned by drugs, such as alcohol, Indian hemp, etc.

Mental activity, which is inseparable from the waking state, implies a concurrent activity in the brain textures and a continuous expenditure of nervous energy. Innumerable impressions from every part of the economy and of the environment are ceaselessly streaming in upon the brain. Coincidentally potential energy is being as incessantly discharged from the cerebral structures in mental operations, and for the energizing of vital processes, muscular movements, etc. These operations are attended by wear and tear of the nervous textures, and by the deposition in them of disintegrative products in ratio to the work effected.

During this activity the brain is freely supplied with blood. Professor Mosso of Turin clearly demonstrated that a moderate hyperæmia of the brain is the concomitant of mental work. The blood-supply of an organ is *pro rata* to the work it is effecting, or, in other words, the activity of the organ rules and governs it.<sup>1</sup> It is, therefore, legitimate to argue, that the increased vascular supply is mainly confined to the active portions of the brain, and is not distributed indiscriminately to every part of the organ. This hypothesis is justified on the ground that the cerebral vessels are terminal, and do not anastomose freely one with another. They are thus capable of vascularizing freely local areas, which may be called into co-operation by the association of ideas, without largely increasing the blood supply of the brain generally. It is strongly supported by the recent observations of Drs Roy and Sherrington, who write,—“We conclude, then, that the chemical products of cerebral metabolism contained in the lymph which bathes the walls of the arterioles of the brain can cause variations in the calibre of the cerebral vessels; and in this reaction the brain possesses an intrinsic mechanism by which its vascular supply can be varied locally in correspondence with local variations of functional activity.” It has, moreover, been definitely ascertained that the temperature of the scalp, which is increased by mental work, is raised in certain areas only, and not over the whole.

The expenditure of nervous energy is a rapid process, and it exceeds that of reconstruction. If the destructive processes were balanced by the reparative, *pari passu*, the need for sleep would never arise; but the former predominates in a very marked degree. The katabolic exceed the anabolic changes, consequently the one must alternate with the other. After a period of activity, of longer

<sup>1</sup> This is well seen in the gray matter of the brain. Its functions being of a high order, it receives a blood supply nearly five times greater than the white substance. Dr W. Ogle pointed out that the arteries of the left cerebral hemisphere are relatively larger in calibre than those of the right hemisphere. He attributed this to the greater activity of the former, and its increased functions in dominating the movements of the right side of the body. He showed that the structures of the left hemisphere are more complex in right-handed persons, and, conversely, that those of the right hemisphere are most highly developed in left-handed persons. Broca, Maragliana, and Seppili have stated that the temperature of the left hemisphere exceeds that of the right.



or shorter duration, a time arrives when a sense of fatigue, suggestive of repose, supervenes, and that is alone relieved by sleep. During sleep the processes are reversed, the psychical centres become quiescent, and molecular activity subsides. Changes, of course, occur in the cerebral cells during the recuperative period of sleep, but reconstructive processes are productive of little disturbance in comparison with discharging processes. Simultaneously the nervous structures are depurated of their waste products, and nervous energy is hoarded up. During sleep the cerebral blood-supply slackens off in obedience to physiological law, and the brain decreases in size. This is apparent in sleeping infants, in whom the fontanelles fall below the level of the skull, and rise again when waking occurs. The temperature of the skull, as well as that of the body generally, is lowered; the pulsations of the heart are decreased in number, and the blood tension is diminished. The respirations are less frequent, shallower, and more thoracic. The secretions (mostly formed under the influence of stimuli) are not formed, and if the gastro-intestinal movements do not absolutely cease, they are greatly diminished. The whole work of the economy is carried at the lowest rate of tension compatible with life.

Briefly summarized, during sleep, the brain, ganglia, medulla oblongata, and spinal cord have their functions suspended or curtailed; those which persist do so in a modified degree, and they are those which, partially resting by day, are capable of working at night without exhaustion. Lichtenberg well said that "the masterpiece of creation must, for a time, become a plant in order to be enabled to represent for a few consecutive hours this same masterpiece of creation."

We have in these opposite conditions a starting-point for our inquiry. They are the normal alternating functions of a healthy nervous system. The one (waking) is attended by an increased cerebral blood-supply, *ubi irritatio, ibi affluxus*, a supply occurring at night, that is not only inimical to sleep, but one that is a frequent source of wakefulness. The other (sleep) is attended by a diminished blood-supply. I am not concerned at present to inquire whether this diminution be causative, concomitant, or consequent, as I am not discussing the causation of sleep. The observations of Durham, Mosso, Regnard, Hammond, Weir-Mitchell, Ehrmann, Salathé, F. Franck, and others, have placed the fact beyond doubt. Pronounced and rapidly induced cerebral anæmia is productive of unconsciousness—a truth that was known early in the second century to Rufus of Ephesus, and one that has been taken advantage of by garroters in rendering their victims helpless.<sup>1</sup> Waking

<sup>1</sup> It is interesting to view this question from the reverse side. Baron von Feuchtersleben, in writing about transfusion of blood, stated.—"The patient on whom Denis made the first experiment of transfusion in a human subject, who had wholly lost his memory, and was affected with great indolence and

and sleeping are the symptoms of cerebral activity and of cerebral rest, and all circumstances which tend to lengthen, curtail, or modify these states, initiate disturbance and mark a departure from health. Continued wakefulness (insomnia) and excess of sleep (somnia) are symptoms of diseased conditions. A changed mental condition by day, as exaltation and depression, betoken altered cerebral states, which are invariably attended by modifications of the vascular supply. Dreams, nightmare, night-terrors, sleep-talking, and sleep-walking, indicate cerebral perturbation by night, and they are always accompanied by an augmented blood-supply to the brain.

I must here digress from my subject for a moment to briefly consider a question which has, in the past, been discussed at great length by many eminent men. It is, Does the mind sleep? Some have affirmed that it never does. Kant, Sir William Hamilton, Sir Benjamin Brodie, Sir Henry Holland, Baron von Feuchtersleben, Liebnitz, and others, thought that the mind never entirely slumbered, and they pointed to dreams in proof of their assertion. They maintained that when sleep appears to be dreamless, it is because the dreams are so evanescent as to lapse into oblivion the moment they are ended. Such faint and fugacious dreams probably often occur, but Locke, Reid, Macnish, and many others, thought that if dreams were constantly going on, they could not always be forgotten; and Locke, who wrote, "We cannot think at any time without being sensible of it," was of opinion that most persons spend a comparatively insignificant part of sleep in dreaming. Many persons who are unconscious of dreaming are reminded of the occurrence by some passing incident in the course of the following day. A similar forgetfulness is by no means uncommon in waking life; a sudden interruption of a train of thought may cause it to lapse, and considerable effort be required to recall it. Occasionally the recollection of it is brought about by some casual circumstance. Sir William Hamilton supported his opinion "that we always dream" by pointing out that he had caused himself to be awakened at different hours during sleep, and that he always awoke dreaming. It will be shown immediately that in the act of awaking the cerebral conditions requisite for dreaming are apt to be established, and that a long dream may occur in the few moments necessary to effect a complete awakening.

We have no knowledge of mind apart from the brain. Dreaming is an evidence of cerebral unrest and of disturbed sleep, consequently it affords no clue to the state of the mind during normal sleep. There are three factors to be taken into account: the mind, through which we know, feel, and will; the brain, which is abso-

drowsiness, became much more lively, and his indolence vanished. His second patient, prior to operation, lay in a state of lethargy accompanied by occasional convulsions, but after injection of some calf's blood, gave every possible proof of active consciousness."

lutely indispensable for the manifestation of mental operations and for the transmission of impressions; and the environment from which these impressions flow. When, therefore, the brain, the medium of communication between the mind and the environment, becomes quiescent and comparatively bloodless in sleep, it abdicates its functions. The machinery becomes inoperative, and it is impossible to do more than speculate upon the state of the mind that lies beyond. Moreover, the evidence derived from the recollection of dreams is eminently unsatisfactory. Memory in waking life and memory in dream life are two distinct things. Some dreams are only remembered in subsequent dreams; and somnambulists, who seldom recollect anything about their escapades when they are awake, often display remarkable powers of memory in their dreams. Dreams that occur in diseased conditions are better remembered than those which occur in health.

To revert now to the subject under discussion, I would mention that Dr Macnish recorded that Dr Perquin of Montpelier (1821) had under his care a female with a portion of her skull exposed. It was noticed, when she was in a dreamless sleep, that her brain was motionless, and lay within the cranium. When her sleep was imperfect, and she was agitated by dreams, her brain moved, and protruded without the cranium, forming a cerebral hernia. This observation alone was sufficient to establish the correlation between dreaming and an increased cerebral blood-supply, *ab uno disce omnes*, but Mosso and others have since amply confirmed it. Delanney and other observers have noted that the cranial temperature is raised during dreaming. This condition differs from that of sound and normal sleep; it resembles in a faint degree that of the waking state. Dreaming is, therefore, symptomatic of cerebral activity insufficient to cause awaking; this is deduced in the same way that morbid states and disordered functions are inferred from definite symptoms.

It has been pointed out that the brain is made up of an infinite number of centres. In dreaming, some centres are slumbering while others are awake, and those that are awake do not co-operate as they are accustomed to do. This is merely another way of saying that dreaming depends upon unequal degrees of sleep. I must therefore inquire when unequal degrees of sleep occur.

Bichât<sup>1</sup> pointed out that "sleep general was made up of many particular sleeps," that it did not invade the whole of the organs at once, but that the cerebrum, sensorium, spinal cord, and the various organs and viscera, must jointly and severally repose for sleep to be sound and complete. Excitability of one or more of these systems disturbs the repose of the whole body, and dreaming or insomnia results. One set of centres in the brain are obscured after another until all are involved in oblivion. The incursion usually

<sup>1</sup> Bichât's opinion was that "dreams are only a portion of the animal life escaped from the torpor in which the other portion is plunged."

takes place in definite order. It first invades the motor centres, then the psychical, and then successively includes the centres of vision, of hearing, of smell, of taste, and of touch. In the process the different reflexes of the body are variously modified, and that in a manner which differs widely from the alterations that occur in hypnotic and cataleptic states. When the psychical centres are in the act of falling asleep, it occasionally happens that consciousness and unconsciousness rapidly alternate, until the latter predominates. In this intermediate stage, dreaming is so common that it has been said that we fall asleep through dream-land, and hallucinations are then prone to occur.<sup>1</sup> When we close our eyes object-consciousness is cut off; subject-consciousness, untrammelled, may be exaggerated. The mind, no longer controlled by the will from within, nor corrected from without, revels in absurdities, "wrapt in pleasing delirium," until at length all intellection terminates, or, at least, no knowledge of it is retained. Sir Walter Scott makes Elspeth say, "Eh, sirs, sic weary dreams as folk hae between sleeping and waking, before they win to the lang sleep and the sound." In this transitional stage a similar erratic disposition is noticeable in connexion with the muscular system. The motor centres in the brain fall asleep before those of the spinal cord, so that the normal inhibitory influence exercised by the former is for the time being in abeyance, and subsequent to this, and prior to the subsidence of activity in the cord itself, there is a tendency to spasmodic action of the muscles, and to slight convulsive movements in the limbs, or in the whole body.<sup>2</sup>

In the act of awaking the senses resume their functions one after another, and not simultaneously. This usually takes place in the reverse order to which they fall asleep. As "the exhaustion of an organ is proportional to the intensity of its exertion," it is obvious that all the centres in the brain cannot be proportionately tired, so it follows that some which are more speedily recuperated than the rest (by responding to slight stimuli) tend to waken up before the others. During the "second sleep"—a sleep in which the slothful often indulge—dreaming is specially apt to occur. Everyone must have experienced the enervating effects of such sleep, in which the invigoration felt after the first long and

<sup>1</sup> Virgil wrote,—“Two gates there are of sleep, whereof the one is said to be of horn, by which an easy egress is given to true visions; the other shining, wrought of white ivory, but (through it) the infernal gods send up false dreams to the upper world” (Davidson’s Translation).

<sup>2</sup> Mark Twain graphically describes the process of falling asleep,—“I would really doze into momentary unconsciousness, and come suddenly out of them with a physical jerk which nearly wrenched my limbs apart—the delusion of the instant being that I was tumbling backwards over a precipice. After I had fallen over eight or nine precipices, and then found out that one-half of my brain had been asleep eight or nine times without the wide-awake, hard-working other half suspecting it, the periodical unconsciousnesses began to extend their pell gradually over more of my brain-territory, and at last I sank into a drowse which grew deeper and deeper.”



sound sleep was entirely dispelled. This sleep is certainly not to be desired by those who, like Panza, have a first sleep that lasts from night till morning.

There are many grades of sleep. It may be so light as to be terminable by the slightest external disturbance, or so profound as to require a very pronounced excitation to interrupt it. For example, Dr Wendell recorded the case of a lady who was delivered of a child during sleep,—“The lady said she had dreamed that something was the matter with her, and awoke with a fright, probably the instant the head was expelled.” It seems to be extremely probable that advancing civilisation has conduced to deepen sleep. The man who sleeps in the jungle with his gun grasped in his hand cannot possibly sleep so soundly as one who is cared for even in his sleep. Sir Richard Burton recorded, in his *Travels through Central Africa*, that the attendants “excited our admiration by braving noon-day suns, and by snoring heavily through the rawest night, with nothing to warm them but a few smouldering embers. In an evil hour, compassion-touched, I threw over their shoulders a pair of English blankets, which in the shortest time completely demoralized them. They learned to lie a-bed o’ mornings.” Kohlschütter, who investigated the depth of natural sleep, found that it was deepest about the end of the first hour, when its depth decreased quickly, and afterwards more slowly until waking occurred. Sir Henry Holland wrote, it is a “series of fluctuating conditions, of which no two minutes are strictly alike.” Mönnighoff and Piesbergen, who more recently investigated the subject, pointed out that the depth of sleep increased a second time after four and a half hours, and continued to grow more profound until the end of five and a half hours. The second deepening, however, does not reach the profundity of the first deep sleep. MM. Rummo and Ferrannini are apparently in accord with this opinion, for they describe a third phase of sleep as occurring at the expiry of four or five hours.<sup>1</sup> It is manifest that various disturbing agents will operate differently at different hours of the night, for reflex phenomena always bear some relation to the intensity of the excitation, the sensitiveness of the part to which

<sup>1</sup> The Ancients divided their nights into portions, evidently with reference to the depth of sleep. The Romans recognised six parts—vespera, conticinium, concubium, intempesta nox (profound sleep), gallicinium, luciferum. The Hebrews divided the night into four parts—6-9 P.M., 9-12 P.M., 1-3 A.M., 3-6 A.M. Forbes writes that in British Burma the people divide their days without clocks. Three of these are—dusk=“Brothers would not know each other time;” after dark, about 7=“Children feel sleepy time;” about 10=“Grown-up people lay down their heads time.” Amongst the Lampongs, midnight is designated *Tenga wingi*=“The time it is well to be sleeping;” 2 A.M. is known as *Hapi semun tua*=“The time that neither young nor old are found awake.” Arnold states that the Japanese divided their days into twelve periods, and call them after the rat, ox, tiger, and hare; the dragon, horse, snake, and ram; and the ape, cock, hog, and fox. Three o’clock in the morning is the watch of the ox (*ushi-no-toki*).

it is applied, and to the depth of sleep. When sleep is deepest the lowest nervous centres are least inhibited, and the blood is probably somewhat inadequately oxygenated. As a rule, whenever the lower centres are released from the bondage of those which habitually control them, they are apt to run riot. It is under such conditions that the nervous system exhibits its vagaries, and that epileptic seizures, convulsive and spasmodic attacks, are apt to occur. Asthmatic seizures, laryngismus stridulus, croup, true and false, often supervene, and the attacks of cough in whooping-cough are prone to be most severe. Painful diseases like gout, and many having "algia" as the terminal syllable of their names, frequently make themselves apparent.

It is during the intermediate states of falling asleep and awaking that dreams most commonly occur. In the first case some centres fall asleep before the others, and in the second some awake before the rest. In both incongruity of thought may occur. They likewise happen during the periods of deep sleep, and when (from any cause) one set of centres are slumbering more soundly than the others. In illustration of these two last propositions we may mention night-terrors and nightmare. In night-terrors, which is really a dream, the little patients (usually from 1 to 4 years) awake after the first two hours of sleep in a state of violent agitation, screaming loudly, and evincing an urgent desire to get away from something (as a wild animal), that they evidently believe is attacking them. They beseech their father or mother to remove it, and fail to recognise the parent they are calling for, who may at that very time have the child in his or her arms. It is evident that the centres of consciousness are sound asleep, while the emotional are awake and unduly active. As the former awake the children recognise their surroundings and gradually become pacified, although with their as yet undeveloped intellectual centres they cannot discriminate that their terror was caused by dreaming, and therefore it takes time to restore their confidence. In the nightmare of adults<sup>1</sup> the attack is excited by an excitation which awakes the centres of consciousness, but which is insufficient to arouse the motor centres, which are slumbering profoundly. It occurs most frequently after undue muscular fatigue,—that is, when a large demand has been made upon the reserve force in the motor areas, —and it mostly comes on during the first deep sleep. The dream is usually of such a nature as to impress the sleeper with a most painful sense of immediate bodily danger, from which he ought instantly to extricate himself. He feels as if he were bound down

<sup>1</sup> Cockayne points out in reference to nightmare,—“Mare in that combination is something like Genius, Spirit; it occurs in Woodmare, which was the Saxon name for Echo.” He mentions that Themison of Laodikeia called it Πνιγάλιον, or Throttler, Choker; while others called it Ἐφιάλτης, or The Jumper on; and he describes it as “an ugly mental struggle, and much more like an emissary from the sulphurous pit than an angel visiting from heaven.” The Karens believe that nightmare is due to “Na” sitting on a sleeper’s stomach.

by some great weight on his chest. His slumbering motor centres failing to respond, his agitation and fright become very pronounced, and eventually he fully awakes, perhaps in the act of groaning or of shouting for help. In sleep-talking or sleep-walking we have examples of disparate degrees of sleep. In the former, the dreamer may answer questions intelligently, and yet be quite unconscious when he awakes that he has done so.<sup>1</sup> In the latter, untrammelled by fear, the somnambulist performs feats he could not possibly accomplish when awake, and yet he retains no recollection of them. It is a sensori-motor and sub-conscious act. The dream being conceived, it is staged so precisely that the actor is able to enact it with admirable exactness. He can perform with his eyes closed as well as open. He is unconscious of sounds or noises not associated with his conception, and he may be shaken, and may himself cough and sneeze without awaking.

(*To be continued.*)

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### III.—ON THE TREATMENT OF PELVIC DISEASE BY ELECTRICITY.

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(*Continued from page 428.*)

TABLE III.—This group includes those cases in which the chief cause of complaint was simply the MECHANICAL INCONVENIENCE caused by the tumour. The indication in such cases was obviously the reduction of the mass of the tumour; and those who have followed the reports of many practitioners during the past three or four years will naturally conclude that this is a class of cases in which the best results might be hoped for. We constantly read of tumours reduced by "one-third" or "one-half" their original bulk, and can readily realize the enormous benefit this retrograde change would confer on many a sufferer. Let us see what results have been obtained.

The Table III. contains three cases only. No. 1 complained of some dysuria, and might thus have been more correctly placed in Table II.; but the dysuria was slight, and she suffered more inconvenience from the difficulty she experienced in walking, etc., than in any other way. Eight applications only were made by negative puncture. The os was high up and forward, and a sound

<sup>1</sup> Dr Maudsley mentions an interesting fact regarding sleep-talking. He writes,—“It is interesting to note in this relation that there are some grown-up persons who, when they talk in their sleep, cannot remember their dreams, but remember them perfectly well when they do not talk.”

could be passed with great discomfort. The punctures were in the posterior fornix. At the end of this time the patient expressed herself as much easier, but after six months she returned to say that she was as bad as ever. Probably had the treatment been prolonged the benefit might have been more permanent.

The second case was that of a single woman, 34 years of age, who had a firm, painless tumour, about 4 inches above the umbilicus, and somewhat prominent. She had neither pain nor menstrual disturbance, the flow being regular and moderate. But she was concerned about her "figure," though even this was not a matter of urgent consequence, as she was inclined to *embonpoint*, and the abdomen was not specially protuberant. In this case twenty positive intra-uterine applications were made, with a total quantity of 1577 ampere-seconds. The tumour at the end of that time was not in any way diminished as far as measurement could determine, and the patient's condition was practically unchanged.

The third case was that of a lady, 35 years of age, who had a small fibroid in the anterior wall of the uterus, and which seemed to be the only explanation of a succession of abortions. These generally occurred about the fourth to sixth month, and it occurred to Dr Croom that if her tumour could in any way be reduced in size by the current, that she might carry a viable child, a result greatly desired by the patient. With this end in view eleven negative intra-uterine applications were made, with a total quantity of 525 ampere-seconds. Two months after this course had ceased the patient again became pregnant, and again, I regret to say, miscarried at the fifth month.

This group thus has given us anything but satisfactory results, and so far none of the cases can be said to have derived much benefit. It is true that none of them presented urgent symptoms, but they all presented conditions which gave the "deobstruent" effect of the current a fair opportunity. The results are instructive, and they show what has been forced upon almost every observer, namely, that the reduction in size of a fibroid tumour by electricity is in the vast majority of cases comparatively small.

These cases do not stand alone, but must be read along with those in Table I., where a tumour was the cause of hæmorrhage. Now, excluding the case of intravaginal polypus referred to (Case 17, Table I.), I have only had one case (Case 2, Table I.) in which the tumour underwent manifest diminution before the treatment was completed. In her case we started with a mass larger than a fist in front of the uterus, and ended with one the size of a hen's egg three months after. In this case eight punctures and ten intra-uterine applications were made. Regarding the others, the most we can say is, that they became more mobile, which probably indicated a certain amount of diminution, but yet this amount was too small to be recognised by any available means of measurement.



This result is undoubtedly somewhat disappointing to those who formed high anticipations of the "deobstruent" effect of electricity, founded, I think not unjustifiably, on the earlier reports. Yet in the presence of this disappointment, one must not forget that while the tumour retained its *status quo ante*, its most serious accompaniment, namely, *hæmorrhage*, almost invariably disappeared; and this is a result which it seems to me we cannot too prominently push to the front. I shall have something more to say regarding the matter in the second part of my paper.

TABLE IV.—The fourth group included cases of SUBINVOLUTION and of ENDOMETRITIS. This group embraces five cases. These all suffered from enlarged uterus, with chronic endometritis of long duration, and some from menorrhagia as well. In all these cases very marked benefit has been obtained,—so marked, indeed, that one may justifiably declare that in them at least the cure has been complete. They are all still under my observation, and are in excellent health.

Case 6 is specially interesting. She had for upwards of four years suffered from copious leucorrhœa; the uterus was large— $3\frac{1}{4}$  inches by the sound—and very tender. She had had a succession of early abortions, usually about the eighth to tenth week. These were always associated with considerable hæmorrhage, and the periods were profuse. The patient was thin and profoundly anæmic. Everything had been done in the way of treatment. Curetting, repeated cauterisation of the uterus, the hot douche, etc., had all been tried without permanent benefit, abortion always following the succeeding pregnancy. She had eleven positive intra-uterine applications, with a total quantity of 544 ampere-seconds. The treatment was spread over two and a half months. Soon after it was discontinued she became pregnant, and is now approaching her confinement, having been in excellent health. No special precautions were taken at any time,—indeed, about the fourth month the patient slipped and fell on the street without any untoward result.<sup>1</sup>

I am, indeed, convinced that in old-standing cases of endometritis, especially when complicated with areolar hyperplasia, we have in electricity a remedy of great potency, and one which, properly used, is yet destined to yield brilliant results.

From the foregoing review of these cases I think we may safely draw the following conclusions:—

1. The galvanic current properly applied is in nearly every case a means of relieving hæmorrhage when due to a fibroid tumour.

2. In a very small proportion of cases the tumour is considerably reduced in size. In a somewhat larger number, but bearing a small proportion to the whole, the tumour is appreciably reduced, being at the end of the course, or subsequently, more mobile and

<sup>1</sup> This patient was safely confined in April.

probably more compact. In the great majority there is but little difference in the bulk of the tumour as the result of this treatment.

3. In cases of endometritis and subinvolution, a cure may be effected in a comparatively short time, and such cases seem peculiarly amenable to electrical treatment.

4. Deposits resulting from pelvic cellulitis are frequently greatly diminished in amount, and the symptoms greatly relieved.

5. Pain, when the result of these inflammatory deposits, disappears in great measure with their reduction. But when the result of ovaritis, it is less, if at all, affected by the *galvanic* current.

As will be seen from the tables presented, the great majority of cases have been treated by the *intra-uterine positive pole*.

In a few, and for various reasons, electro-negative puncture has been employed; and so far as my experience goes, the chief, and, indeed, only risk seems to be in these latter cases.

In cases of bleeding fibroids, when the intra-uterine positive pole is employed, the patient comes at the appointed hour, undresses immediately, and after the application rests for ten or fifteen minutes; she then dresses, and walks or drives home, as suits her convenience. No special douche of any sort is employed—the patient merely being advised to use the ordinary syringe daily. I take care to immerse the electrode in very hot water, and to lubricate it with antiseptic vaseline.

Where puncture is adopted greater precautions are advisable. When I commenced this treatment I employed for puncture a straight platinum sound with a trocar point and sliding sheath, the metal being exposed about  $\frac{1}{2}$  inch.

My first case (Table II., Case 1) developed symptoms which gave me such an amount of anxiety that it was many months before I summoned courage to employ puncture again.

TABLE II., CASE 1.—Mrs B.; aged 35; no children. Oct. 15th, 1887. Complaints of profuse menstruation, dysmenorrhœa, and continuous intermenstrual pain; markedly anæmic, with pinched expression. *P.V.*—The roof is filled with a hard bulging tumour, which extends 2 to 3 inches above the pubes. Cervix is out of reach behind the pubes. The uterus cannot be defined, and the mass is immovable.

*Treatment.*—Thirteen negative punctures were made, the trocar being passed about 1 c.m. into the tumour through the posterior fornix. The current at first varied from 60 to 95 m.a. The trocar was always reintroduced into the same spot, and at the fourth application it passed directly into the cavity of the uterus. During the later applications the current varied from 90 to 100 m.a., and the duration from five to eight minutes. 413 ampere-seconds were administered in all.

*Result.*—From Oct. 15th to Nov. 4th patient remained in the Home, afterwards coming for the treatment. At first patient com-

plained of great pain after each application, which, however, lasted for an hour or two only.

*Oct. 31.*—A sinus about  $1\frac{1}{2}$  inch in depth, and of the diameter of a No. 8 catheter, has been formed behind the cervix, which seems to communicate with the uterine cavity.

*Nov. 12.*—Patient has complained of much pain and back-ache since last application. The sinus now admits a sound  $2\frac{3}{4}$  inches.

*Nov. 20.*—Patient came to-day suffering from intense colicky pains, and says that “a shred of something” had come away yesterday. Patient sent home without treatment.

*Nov. 23.*—Seen at her own home. Pain has been continuous. Pulse, 100; temperature,  $101^{\circ}$ . A soft mass is found projecting through sinus, a highly foetid grumous discharge escaping from the vagina.

*Nov. 26.*—Pulse, 130; temperature,  $102^{\circ}$ . Discharge very foetid and patient very prostrate. Mass about size of Tangerine orange, projecting through sinus. Copious douching with corrosive has been constantly employed.

*Nov. 27.*—A foetid shreddy mass has been expelled; pulse and temperature have fallen, and patient is less prostrate.

*Dec. 5.*—Convalescent. Has been seen recently by Dr Croom, who informs me that her condition is pretty much as it was before treatment.

I attribute this very serious result to the presence of the sinus formed by the electrode, and which was of course exposed to the vaginal discharges. And though I have used the same instrument in one or two cases since without any such untoward result, I now employ always a large-sized electrolytic needle of the same form as is used in electrolysis of nævi.

The needle, which is of platinum, is plunged well into the tumour, the vulcanite sheathing passing well through the mucous membrane. The latter is thus in no way corroded by the action of the current. The electrolysis takes place in the deeper parts of the tumour, the slight puncture in the mucous membrane closes up on withdrawal of the needle, and no dangerous surface is exposed.

Moreover, both before and after the application an antiseptic douche is employed, and the patient is advised either to come into the Home for a time, or at least to desist from all active occupation until the treatment is fairly under way.

I am bound to say, however, that the results of negative puncture have not been such as to impress me with its special value. I think it greatly adds to the risk, and I am not inclined to employ it in any case where it is possible to pass the sound into the uterus. In cases where this is impossible, and where hæmorrhage is a pressing symptom, I should, however, not hesitate to employ it, with due regard to the risk involved, in the hope that

it may modify the tumour so far as to permit the uterus to be reached and the sound introduced into its cavity.

## II.

I had hoped, in the next part of this communication, to have dealt at some length with a discussion of the mode of action of the electric current in producing the results which have been described in the preceding pages. The rationale of the action of electricity is certainly a matter of profound interest, and it is further a matter which can be largely elucidated, I am sure, by careful experiment and observation, and I am equally sure that without such careful experiments its elucidation is entirely impossible.

But I would here urge one very important matter which I feel is apt to be ignored both by the opponents and the advocates of this form of treatment. Many of those who doubt the efficacy of electricity in gynaecology base their doubt on the ground that its mode of action has not been adequately explained. They say, Show me *how* the thing acts, and then I shall discuss the results.

Now this is to me a most unscientific and impossible position. Are you to take up this position, that because you cannot explain *how* the force acts, you are not to accept the results? Take an analogous case. Are we to demand that, because we are unable to understand how the salts of mercury affect a syphilitic subject, we must cease to employ them in this disease? Are we to ignore the fact that the symptoms of syphilis disappear under the influence of these salts, and decline to interfere with the progress of the disease simply because we cannot understand the *modus operandi* of the antidote? And thus, in spite of the fact that an enormous amount of evidence has been accumulated to prove that the intra-uterine application of the positive pole checks most cases of uterine hæmorrhage, yet because we are unable to state the rationale of the action we are to stand by and let the patient bleed, or else proceed to remove her ovaries. And if, while the laparotomist is sharpening his scalpel, the electrician taps him on the shoulder and asks him, "On what principle do you remove the ovaries?" "What is the rationale of this procedure?" He will say, "I am about to excise and destroy the 'menstrual' nerve." Or, if not so advanced, he will say, "I am about to bring on the menopause," which does not seem to go very far towards an ultimate explanation.

The fact is, the man with a battery and a galvanometer is every whit as "scientific" (to use a cant term) as he with a bistoury and ligature. Their action is equally empiric; they both judge from their results. The one gives twenty or thirty applications of a certain current strength, and finds the hæmorrhage ceases and the patient gains in health and well-being. The other removes the appendages with the same result. The choice of the procedure will depend on a consideration of the risk to the patient and the



permanency of the result. Let us take a simple and quite analogous case. You are called to a man suffering from toothache. You examine the tooth, and say to him, "My friend, you are indeed suffering very severe pain. Now, I have here a solution of a certain substance, a single drop of which, applied to the tooth, will, I know from experience, relieve the pain at once, but as I cannot tell you exactly how it produces this effect, it would be unscientific to use it; so, if you will open the mouth wide enough, I shall pull the tooth out." It strikes me that your patient will prefer to let *you* keep your science while *he* keeps his tooth.

It has been stated by some electro-therapeutists that success in this department demands that a man be first a profound gynecologist, and, second, a profound electrician. Now, there is a perfectly obvious fallacy in this. A man must certainly be a competent gynecologist, for the diagnosis and many other responsibilities of the case rest on him; but a profound knowledge of electrical theory is no more necessary to him than is an encyclopædic knowledge of chemistry essential to a man who is to administer a ferruginous tonic. Both must have a practical knowledge of the best ways of prescribing and administering the agents they are to employ; but that is a different thing from a profound knowledge of the chemical and physical laws which determine their production and regulate their action.

It is different, however, when the electro-therapeutists attempt to give a rationale of the action of electricity. Here a very much deeper acquaintance with the phenomena and laws of electrical science is required, and the haphazard theorizing of the superficial serves only to darken counsel. The action of electrical currents on the organized tissues of the human body and their influence in producing change of action and structure is one of the most difficult problems which the electrician has to face. The behaviour of a simple electrolyte, such as a solution of common salt, under the passage of a galvanic current involves problems which are by no means yet solved, and how much more complex must be the conditions when highly elaborated electrolytes like albumen and similar vital compounds are under discussion.

When we add to the action of the current on these regarded as mere chemical substances its action on the contractile, vascular, and nervous tissues, the problem becomes involved to an enormous degree. To one who realizes this, it is not a little surprising to observe the free and easy way in which those who seem to know least say most, and that most confidently, regarding these intricate problems.

As an example of some of the utterances which are being gathered around this subject, let me quote a few sentences from a paper, which some of the Fellows may have read, by Dr Laphorn Smith of Montreal, in the *American Journal of Obstetrics*:<sup>1</sup>—

"As Mr Tait and Dr Bantock at a recent meeting of the *British American Journal of Obstetrics*, vol. xxii., p. 7

*Gynecological Society* made the statement that a fibroid tumour could not be electrolyzed—that is, decomposed into its constituent elements by any amount of current which it was possible to bear, 200 m.a., for instance, for five minutes—I proceeded with my galvanometer and rheostat to an electroplating establishment and interposed them in the circuit while the process was going on, when, to my surprise, I found that  $2\frac{1}{2}$  m.a. was the greatest strength they ever employed. In fact, a copper article was completely coated with silver in five minutes with a current of that strength, which, on being weighed, showed that an equivalent of 2 grains of cyanide had been decomposed. Now, if 2 grains are decomposed by  $2\frac{1}{2}$  m.a. in five minutes, 480 grains would be decomposed in eleven minutes by 250 m.a., so that sixteen applications of eleven minutes, with a current strength of 250 m.a., would decompose 1 lb. of the tumour.”

The circumstantial way in which Dr Smith recounts the details of his visit to the electroplater's, and his account of his observations and his deductions therefrom, might lead some one to suppose that here we had a reliable scientific observation on which we might destroy a few pounds of fibroid tumour per day!

Now, neglecting the fact that the current required to decompose this quantity of silver cyanide would be more than 260 times<sup>1</sup> what Dr Smith states, he calmly assumes that the conditions in the electroplater's cell are comparable with those of a fibroid tumour in the uterus, and he asks us to regard such a neoplasm as identical with a saturated solution of the cyanide of copper. Thus he tells us, in so many words, that since 2 grains of cyanide of silver are decomposed by  $2\frac{1}{2}$  m.a. in five minutes, then 1 lb. of fibroid tumour will be decomposed by 250 m.a. in 176 minutes! which is a rule of three on the same lines as this:—“If a herring and a half costs  $1\frac{1}{2}$ d., how many will 10 men eat in a week?”

This is only one of the many examples of curious reasoning which the literature of this subject already teems with, and which it would be a sheer waste of time for me to detain you with.

I had hoped at this time to have given an account of some experiments which may serve to throw some light on the mode of action of these currents on the tissues, and which may serve to explain some of the phenomena observed; but circumstances have arisen which have prevented me completing them, and I think it better to defer their full discussion until a future occasion.

I should like, however, to indicate one or two conclusions which our present knowledge justifies, and to offer a suggestion based on these which may serve to explain some of the phenomena which arise in our experience of the galvanic treatment of these conditions.

1. Conductors of electricity are of two kinds:—

(a.) Those through which the current flows without producing

<sup>1</sup> As a matter of fact I find that 2.5 m.a. in 5 minutes will only decompose .00931 grains of cyanide of silver.

any permanent chemical change, *e.g.*, metals, carbon, and most solid bodies.

(*b.*) Those in which the current in flowing produces some chemical change, *e.g.*, solutions of salts, albumen, etc., compound liquids generally.

Such conductors are accordingly termed "Electrolytes," and the process of decomposition is termed "Electrolysis."

2. The amount of this decomposition in any given case depends on—

(*a.*) The strength of the current.

(*b.*) The duration of the current.

(*c.*) The nature of the substance.

3. The products of electrolytic decomposition are termed the "Ions," and appear in the immediate vicinity of the electrodes. Those of a basic (metallic, alkaline) character are termed "Kathions," and appear at the negative electrode: those of an acid character are termed "Anions," and appear at the positive electrode.

4. No products of electrolysis appear nor can be detected in the intermediate mass of the electrolyte, except as the result of the *diffusion* of the free ions from the electrodes.

5. The influence of the galvanic current on fibroid tumours and other morbid conditions is generally attributed to this double result of electrolytic conduction:—

(*a.*) The tissue is disintegrated by the passage of the current *per se*.

(*b.*) The *acid* and *alkaline* products of decomposition accumulating at each electrode exert a caustic and further disintegrating effect on the tissues in their vicinity.

6. The following facts enable us to test the validity of these assumptions:—

(*a.*) From a series of experiments on the fresh muscular tissue of various animals—rabbit, sheep, ox—recently killed, I find that 200 milliamperes passed for thirty minutes (*i.e.*, 360 ampere-seconds) break up 110 grains of tissue.

This was arrived at from experiments made in the following way:—The piece of fresh tissue to be experimented on was soaked either in saline solution or defibrinated blood (so as to compensate for the conductivity lost by the removal of the circulation as in the living tissue), and was then pierced by a pair of platinum needles connected through a galvanometer to a battery, and the current passed for the requisite time. The area of electrolysed tissue round one pole was then cut across, the unaltered tissue was carefully removed from that showing signs of disintegration, and the two masses carefully weighed. The results on recent tissue over a considerable number of experiments are remarkably constant, and 110 grains for 360 ampere-seconds is rather over than under the average.

(*b.*) Similar experiments on a recently removed fibroid tumour

give smaller numbers—85 to 90 grains being the corresponding quantity.

7. Now, referring to column 9 of the tables appended, it will be found that 1884 ampere-seconds was the largest quantity employed in any one case (Case 10). Hence, provided that the tumour in this case was as decomposable as the tissues under experiment, only 573 grains could have been destroyed by the whole current employed, assuming it was spent entirely on the tumour.

8. In Case 2, Table I., the total quantity employed was 764 ampere-seconds, so that only 220 grains of tumour tissue could have been decomposed directly by the current. Yet in this case the tumour shrunk from a size larger than a closed fist to that of a hen's egg in the course of a few months.

9. In the next place we may consider the effects of the *caustic* action of the acid and alkaline bodies liberated at the electrodes in disintegrating the tissue.

10. I find on calculation that, assuming that the alkaline material set free at the negative electrode consisted entirely of caustic potash (the most powerful caustic base known) liberated from the decomposition of the potassium salts of the blood and tissues, we can obtain by means of 360 ampere-seconds 17 grains, and with 764 ampere-seconds 29 grains of KOH.

11. This amount, though quite capable of giving a litmus paper reaction, is a wholly insignificant quantity, and of course quite incapable of any efficient action on the tissues of a myoma.

12. Farther, assuming that the acid substance set free at the anode is hydrochloric acid derived from the decomposition of the chlorides of the tissues, the total quantity set free by 764 units is 23 grains HCl.

13. Such facts as these, it seems to me, do not admit of any conclusion other than that the diminution of the size of tumours is not to be explained by the direct destruction of tissue by primary electrolysis, nor by the secondary action of the products of such electrolysis upon the surrounding tissues.

14. We must rather look for the explanation of the results of galvanic treatment in a consideration of the special structure of the tumours with which we are dealing.

15. A fibroid tumour of the uterus is essentially a non-vascular structure. Large veins and venous sinuses are frequently found embedded in it, but it possesses no true capillary structure in its interior.

16. The mass of the neoplasm is surrounded by a vascular area of great richness—the capsule; and it is undoubtedly from the vascular region, which presses on the mucous lining of the uterus in the submucous variety, that the great hæmorrhage arises. This vascularity is found extending on to the mucous membrane in the vicinity of and beyond the limits of the tumour proper.

17. Provided, then, we could destroy the capillary structure in



this region, we should be able to check or control the hæmorrhage from the uterine surface of the tumour.

18. I am convinced that this gives an explanation of the action of the galvanic current in checking uterine hæmorrhage.

19. The anode (positive pole) produces a firm coagulum in all parts of the tissue in contact with it. A comparatively small current is capable of doing this; and such a current will leave the uterine surface of the capsule of the fibroid completely disorganized—the blood coagulated, and the smaller vessels practically obliterated.

20. Such a result will thus explain the *diminution of hæmorrhage*.

21. But, further, in certain cases of uterine fibroid the vascular area so destroyed by the action of the current may represent a very large part of the nutritive channels of the tumour. In such a case the cutting off of its blood supply may result in a partial atrophy of the tumour; and I would suggest that this offers an explanation of the *reduction in size* of the mass of the tumour in some cases. And this, too, would account for the exceptional character of the occurrence.

22. This may not be the *only* element to be taken into account in explaining these changes, and the absorption of cellulitic deposits would seem to require the presence of another influence.

23. It has been supposed that the current, besides the evident decomposition whose products are manifest at the electrodes, exerts an “interpolar” influence on the electrolytic mass. The nature of this influence is obscure.

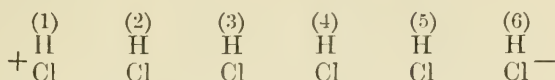
24. The following considerations may throw some light on it. According to the generally accepted electrolytic theory of Grotthius and Clausius, the passage of a current through an electrolyte first arranges the molecules of the substances in such a way that all the kathions turn towards the negative, while the anions turn towards the positive pole.

25. The first unit of decomposition results in the anion nearest the positive electrode being torn from its associated kathion, while the kathion nearest the negative electrode is torn from its associated anion.

26. One might naturally suppose that the two ions left behind by this disruption might satisfy their affinities by uniting, but to do so they must cross the liquid. Now, no ion can by the most carefully applied tests be detected in the process of crossing, and the assumption is that they do not so cross and unite.

27. It is believed that each ion, after the attraction of its fellow to the electrode, attacks, as it were, and displaces the corresponding ion of the nearest molecule in the chain, which in turn attacks its neighbour, until ultimately, by an interchange of the ions of all the intermediate molecules, equilibrium of the mass is again established.

28. These views may be understood by a reference to the sub-joined diagrams :—

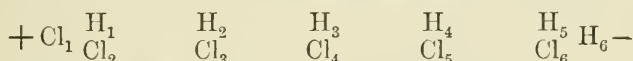


Let a solution containing six molecules of hydrochloric acid be traversed by a current of electricity.

The molecules will arrange themselves in a chain. Now the + electrode will attract the Cl of molecule 1, while the - electrode will attract the H of molecule 6. Thus :—



And now equilibrium will be established, not by the crossing of the free H to the free Cl, but by the H(1) displacing the H of HCl(2), and the H(2) displacing the H of HCl(3), which in turn displaces the H of HCl(4), and so on, until ultimately the H of HCl(5) is free to combine with Cl(6). So that, after the decomposition of one molecule, the arrangement will stand thus :—



Thus we see that all the remaining five molecules have changed partners.

29. Now in a comparatively simple body such as hydrochloric acid the molecular stability of the new molecules may be not appreciably less than that of the original ones.

30. But in substances composed of highly elaborated chemical constituents such as the tissues of the body are, the continued electrical disturbances and interchange of the components of the molecules affected may produce an amount of molecular instability which may seriously affect the vital process of the tissue involved.

31. Thus it does not seem improbable that the disturbance of the molecular equilibrium produced by the galvanic current in such a substance as a mass of cellulosic deposit may favour materially its absorption by the associated capillaries or lymphatics; and it seems only natural to suppose that imperfectly organized inflammatory deposits would yield sooner than the more highly vitalized and healthy tissues.

I have made these remarks, not with a view to offer a final explanation of the phenomena under consideration, but rather with the object of showing what seems to me the lines on which the explanation must go, and also that such explanation does not lie, as some would have us suppose, on the surface.

The matter is eminently one for experimental inquiry, and I hope before long to lay some results derived from this source before the Society.

## I.—HÆMORRHAGE.

| 1   | 2    | 3                  | 4         | 5                                                                                                                     | 6                   | 7                    | 8                | 9                          | 10                                                                                |
|-----|------|--------------------|-----------|-----------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|------------------|----------------------------|-----------------------------------------------------------------------------------|
| No. | Age. | Married or Single. | Children. | Complaint.                                                                                                            | Internal Electrode. | No. of Applications. | Average Current. | Ampere-seconds = Quantity. | Result.                                                                           |
| 1   | 40   | M.                 | 0         | Menorrhagia. Small Fibroid.                                                                                           | In Uterus +         | 2                    | 39               | 23'4                       | Treatment discontinued on account of pain produced in ovary.                      |
| 2   | 42   | S.                 |           | Fibroid. Continuous hæmorrhage.                                                                                       | Puncture —          | } 18                 | 125              | 764'48                     | Periods regular; flow moderate; health good.                                      |
| 3   | 33   | M.                 | 0         | Small fibroid in fundus. Hæmorrhage.                                                                                  | In Uterus +         |                      | 102              | 273'6                      | Patient highly nervous; could not bear sufficient current. No improvement.        |
| 4   | 47   |                    | 7         | Large, soft uterus; profuse and continuous hæmorrhage for many weeks; great anæmia. Sound 4½ in.                      | In Uterus +         | 10                   | 113              | 498'42                     | Discharged polypus after 11th application; health quite satisfactory since.       |
| 5   | 42   | M.                 | 0         | Large fibroid 3 in. above umbilicus. Periods 10 to 14 days, very profuse.                                             | In Uterus +         | 13                   | 191              | 896'6                      | Periods steadily diminished. Periods previous to discharge 5 days; amount normal. |
| 6   | 30   | S.                 |           | Tumour to umbilicus. Hæmorrhage.                                                                                      | In Uterus +         | 17                   | 183              | 1101'                      | No change in size of tumour. Periods normal.                                      |
| 7   | 36   | S.                 |           | Small fibroid in fundus. Menorrhagia 10 to 14 days, profuse; profound anæmia.                                         | In Uterus +         | 21                   | 159              | 1130'1                     | Periods normal; health greatly improved.                                          |
| 8   | 42   | M.                 | 3         | Bleeding fibroid; soft retroflexed uterus.                                                                            | In Uterus +         | 6                    | 136              | 269'9                      | First period improved, but patient did not return for treatment.                  |
| 9   | 45   | M.                 | 0         | Very frequent and profuse hæmorrhage lasting for years. No appreciable tumour or other cause. Very anæmic and feeble. | In Uterus +         | 13                   | 152              | 616'9                      | Periods normal; health excellent.                                                 |
| 10  | 26   | S.                 |           | Fibroid. Profuse and long-continued hæmorrhage; uterus slightly enlarged; small nodule on left side.                  | In Uterus +         | 27                   | 197              | 1884'2                     | No improvement when dismissed.                                                    |
| 11  | 52   | M.                 | 0         | Enormous fibroid. Occasional attacks of severe hæmorrhage, irregular.                                                 | In Uterus +         | 8                    | 196              | 629'1                      | No change during treatment. Discontinued on account of bronchitis.                |
| 12  | 39   | M.                 | 5         | Fibroid 2 in. above pubes. Sound 3½ in. Profuse hæmorrhage, 5 or 6 years.                                             | In Uterus +         | 23                   | 173              | 1355'1                     | Tumour unaffected. Periods normal, 3 weeks clear interval. Able for all duties.   |

|    |    |    |   |                                                                                                                                       |             |    |     |        |                                                                                                                                                      |
|----|----|----|---|---------------------------------------------------------------------------------------------------------------------------------------|-------------|----|-----|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | 50 | W. | 7 | Profuse irregular hæmorrhage for last 7 months. Intensely anæmic and breathless. Sound 4 in. Uterus very soft.                        | In Uterus + | 18 | 212 | 1489·  | Jan. 1890.—No period in last 12 months. Health good.                                                                                                 |
| 14 | 42 | S. |   | Lobulated fibroid reaching to 1 in. below the umbilicus. Tumour flat. Sound 3½ in. Hemorrhage. Periods 10 to 14 days.                 | Puncture —  | 19 | 115 | 860·4  | Sept. 1889.—General health greatly improved. Periods 3 days.                                                                                         |
| 15 | 50 | S. |   | Fibroid 2 in. below umbilicus. Profuse hemorrhage 6 to 10 days. Sound 4½ in.                                                          | In Uterus + | 21 | 152 | 1768·  | Nov. 1889.—No period for 6 weeks; every 28th day since July; very moderate in amount; health greatly improved.                                       |
| 16 | 47 | W. | 0 | Large fibroid in hollow of sacrum. Great hemorrhage at periods for last 6 months.                                                     | In Uterus   | 12 | 127 | 606·   | July 1889.—Last two periods normal. Jan. 1890.—Periods quite normal. Suffers great pain on walking. Tumour apparently unaltered, impacted in pelvis. |
| 17 | 35 | M. | 2 | Large intra-vaginal polypus, growing from posterior uterine wall; great hemorrhage and exhaustion. Uterus cannot be felt bi-manually. | Puncture —  | 18 | 177 | 1160·7 | Tumour entirely destroyed; uterus normal; os slightly gaping; stump of pedicle about size of hazel-nut. Periods normal.                              |
| 18 | 30 | M. | 0 | Menorrhagia following abortion, 18 months, periods lasting 14 days.                                                                   | In Uterus + | 4  | 123 | 195·   | First period after treatment 4 days. Some ovarian pain relieved by faradic current. Did not return for treatment.                                    |
| 19 | 34 | M. | 3 | Subinvolution. Endometritis. Menorrhagia. Sound 3½ in.                                                                                | In Uterus + | 12 | 99  | 506·   | Uterus 2½ in.; nonsensitive; periods regular, 4 days. Leucorrhœa gone.                                                                               |
| 20 | 27 | M. | 0 | Profuse menorrhagia, "fibroid" uterus. Period 14 days. Sound 2½ in.                                                                   | In Uterus + | 10 | 161 | 688·2  | Period 5 days, otherwise normal. General health much improved.                                                                                       |
| 21 | 30 | M. | 0 | Large fibroid. Menorrhagia, profuse and almost continuous.                                                                            | In Uterus + | 4  | 137 | 231·6  | Hemorrhage ceased after second application; treatment unavoidably discontinued.                                                                      |
| 22 | 40 | S. |   | Fibroid 2½ in. below umbilicus. Profuse menorrhagia; profound anæmia and exhaustion.                                                  | In Uterus + | 19 | 105 | 679·4  | Periods normal in amount, 3-4 days. Health quite restored.                                                                                           |
| 23 | 33 | S. |   | Small fibroid in anterior wall. Menorrhagia often very severe. Never more than 6 days' interval.                                      | In Uterus + | 15 | 115 | 590·   | Periods regular—5 days' duration. Health greatly improved.                                                                                           |



## II.—PAIN.

| 1   | 2    | 3                  | 4         | 5                                                                                                                            | 6                   | 7                    | 8                | 9                          | 10                                                                                        |
|-----|------|--------------------|-----------|------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|------------------|----------------------------|-------------------------------------------------------------------------------------------|
| No. | Age. | Married or Single. | Children. | Complaint.                                                                                                                   | Internal Electrode. | No. of Applications. | Average Current. | Ampere-seconds = Quantity. | Result.                                                                                   |
| 1   | 35   | M.                 | 0         | Fibroid. Hæmorrhage. Pain.                                                                                                   | Puncture —          | 13                   | 94               | 413·8                      | Nearly succumbed to septicæmia. (See full notes in paper).                                |
| 2   | 27   | S.                 | 0         | Large fibroid, pain, and hæmorrhage.                                                                                         | In Uterus +         | 10                   | 119              | 427·6                      | Hæmorrhage diminished; no change in tumour or pain.                                       |
| 3   | 26   | M.                 | 0         | Great dysmenorrhœa. Periods irregular, delayed. Fibroid anterior wall. Uterus 3½ in.                                         | In Uterus +         | 8                    | 169              | 487·5                      | General health greatly improved; last period free from pain.                              |
| 4   | 32   | M.                 | 3         | Great dysmenorrhœa. Endometritis. Deposit in right fornix.                                                                   | In Uterus +         | 6                    | 162              | 385·2                      | Pain and deposit entirely gone. Discharged quite well. Still well in January 1890.        |
| 5   | 35   | M.                 | 0         | Large perimetritic deposit filling up pelvis; uterus entirely fixed; constant pain.                                          | Puncture —          | 25                   | 101              | 753·6                      | Mass greatly diminished, causing no inconvenience.                                        |
| 6   | 25   | M.                 | 1         | Subinvolution; dysmenorrhœa; left ovary prolapsed; uterus tender; sound 3½ in.                                               | In Uterus +         | 6                    | 54               | 94·5                       | No improvement.                                                                           |
| 7   | 40   | S.                 | 0         | Enlarged retroflexed uterus; backache; great difficulty in walking.                                                          | In Uterus +         | 30                   | 149              | 1373·7                     | Temporary improvement, but relapsed after treatment ceased.                               |
| 8   | 48   | S.                 | 0         | Fibroid in posterior wall; uterus acutely retroflexed, impacted; great metrorrhagia; great pain and exhaustion.              | In Uterus +         | 22                   | 162              | 1238·5                     | Floodings ceased; pain continues; no change in tumour.                                    |
| 9   | 26   | M.                 | 1         | Chronic ovarian pain; great dysmenorrhœa; periods profuse; sound 3½ in. Uterus anteverted; left fornix depressed and tender. | In Uterus +         | 11                   | 126              | 450·6                      | Pain quite gone; fornices clear; sound 2½ in. Health excellent.                           |
| 10  | 18   | S.                 | 0         | Dysmenorrhœa; small anteverted uterus, very tender; left ovary very sensitive.                                               | In Uterus +         | 7                    | 58               | 110·4                      | Pain gone; periods normal.                                                                |
| 11  | 30   | S.                 | 0         | Menorrhagia; anteverted uterus, slightly enlarged, soft and tender.                                                          | In Uterus +         | 5                    | 153              | 104·7                      | First period diminished in amount and free from pain; treatment unavoidably discontinued. |
| 12  | 21   | M.                 | 0         | Great pelvic pain; left ovary tender, prolapsed and fixed.                                                                   | In Uterus +         | 3                    | 55               | 23·4                       | 10 days after treatment pain much relieved; unable to return for treatment.               |
| 13  | 38   | M.                 | 4         | Backache; chronic endometritis; cervix highly sensitive. Dysmenorrhœa. Uterus 3½ in.                                         | In Uterus +         | 7                    | 114              | 322·6                      | Uterus 2½ in. Sensitivity gone; slight leucorrhœa; last 3 periods painless.               |

## III.—TUMOUR. Not hæmorrhagic nor painful.

| 1   | 2    | 3                  | 4         | 5                                                                                               | 6                   | 7                    | 8                | 9                          | 10                                                               |
|-----|------|--------------------|-----------|-------------------------------------------------------------------------------------------------|---------------------|----------------------|------------------|----------------------------|------------------------------------------------------------------|
| No. | Age. | Married or Single. | Children. | Complaint.                                                                                      | Internal Electrode. | No. of Applications. | Average Current. | Ampere-seconds = Quantity. | Result.                                                          |
| 1   | 41   | M.                 | 0         | Large fibroid. Some pain. Dysuria.                                                              | Puncture —          | 8                    | 110              | 309'95                     | Dysuria temporarily relieved; subsequent relapse 6 months after. |
| 2   | 34   | S.                 |           | Large fibroid of posterior wall, 4 in. above pubes; sound forward 2½ in. Periods nearly normal. | In Uterus +         | 20                   | 206              | 1577'1                     | No alteration in tumour.                                         |
| 3   | 35   | M.                 |           | Repeated abortions caused by small fibroid. No menstrual or other disturbance. Sound 3½ in.     | In Uterus —         | 11                   | 113              | 525'                       | January 1890. — Miscarried again.                                |

## IV.—SUBINVOLUTION AND ENDOMETRITIS.

| 1   | 2    | 3                  | 4         | 5                                                                                                                                          | 6                   | 7                    | 8                | 9                          | 10                                                                                                                 |
|-----|------|--------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------|
| No. | Age. | Married or Single. | Children. | Complaint.                                                                                                                                 | Internal Electrode. | No. of Applications. | Average Current. | Ampere-seconds = Quantity. | Result.                                                                                                            |
| 1   | 26   | S.                 |           | Perimetritic deposit behind and on left side of uterus; great pain in left ovarian region; uterus and ovaries fixed. Chronic endometritis. | In Uterus +         | 11                   | 114              | 459'1                      | No local improvement, general health improved.                                                                     |
| 2   | 48   | W.                 | 5         | Chronic endometritis. Leucorrhœa and menorrhagia. Uterus 3½ in.                                                                            | In Uterus +         | 22                   | 146              | 1470'6                     | General health greatly improved. Uterus 2½ in. Leucorrhœa very slight, serous. Discharge ceased; periods painless. |
| 3   | 45   | M.                 | 4         | Chronic endometritis; periods somewhat scanty and painful. Uterus enlarged.                                                                | In Uterus —         | 9                    | 100              | 310'8                      | Uterus 2½ in. Organs perfectly normal. Health excellent.                                                           |
| 4   | 46   | M.                 | 7         | Chronic endometritis. Subinvolution. Uterus very tender; sound 3½ in.                                                                      | In Uterus +         | 3                    | 99               | 39'6                       | Uterus 2½ in. Discharge very slight. Wears pessary with comfort.                                                   |
| 5   | 42   | M.                 | 4         | Chronic endometritis. Uterus retroverted. Sound 3½ in.                                                                                     | In Uterus +         | 3                    | 96               | 113'4                      | Uterus normal; leucorrhœa gone. Patient since confined at term.                                                    |
| 6   | 34   | M.                 | 1         | Chronic endometritis; profuse leucorrhœa; repeated abortions.                                                                              | In Uterus +         | 11                   | 139              | 544'24                     |                                                                                                                    |

#### IV.—GYNÆCOLOGICAL CASES TREATED BY ELECTRICITY IN PROFESSOR SIMPSON'S CLINIQUE.

By W. FRASER WRIGHT, M.B., formerly Buchanan Scholar, University of Edinburgh; late Clinical Assistant, University Gynæcological Wards, Edinburgh Infirmary; and In-door House-Surgeon, Glasgow Maternity Hospital.

THE following cases formed the subject of a communication made to the Edinburgh Obstetrical Society on 8th January 1890. It is here impossible, for want of space, to report them as fully as one would desire, but a full account of them will be found in the Society's *Transactions* for this year, to which publication, therefore, those who are specially interested in the subject are requested to refer. For it is only by recording fully the cases treated that any information concerning the value of this treatment can be conveyed. Mere records of impressions, vaguely stated, are of little value, and often very misleading.

The cases treated were those which came to the Buchanan Ward of the Royal Infirmary while I was Prof. Simpson's hospital assistant, and had charge of his beds during the year 1887-1888. To his kindness and supervision I am greatly indebted. For convenience they may be divided into four categories.

During the course of electrical treatment to which these cases were subjected, ergot and all other drugs and treatment were withheld; so that, except when otherwise stated, there is only the one probable cause for the result.

##### DETAILS OF THE CASES.

##### A.—Fibroids, with Hæmorrhage as the chief symptom.

CASE I.—Mrs C., æt. 27, sterile, was admitted on 18th April 1888, complaining of great abdominal pain, menorrhagia, and difficulty in micturition, amounting often to retention. All kinds of treatment had been tried without success. There was a fibroid connected with the posterior wall of the retroverted uterus, and completely blocking the pelvis.

After fourteen negative electro-punctures the pain was removed, the menorrhagia ceased, and the tumour diminished in size, so that it could be grasped bimanually, and moved without causing pain. The bladder disturbance was entirely relieved. A year later the improvement continued, and she was able to do her housework as usual.

CASE II.—Mrs J., æt. 34, ii.-para, admitted 16th April 1888, complaining of great weakness, pain in back and legs, and being too much unwell. Menorrhagia had existed for last six years, the periods being of twenty-eight day type, and lasting fourteen days, previously having lasted three or four. Thrice previously she had

undergone treatment in Professor Simpson's Ward, but without benefit. A fibroid about size of a  $4\frac{1}{2}$  months' pregnancy was found connected with the right border and posterior wall of the uterus.

Five positive electro-cauterizations of 100 to 150 m̀a., lasting from five to ten minutes, were made between 19th April and 12th May, with the result that a left-sided cellulitis was set up on 14th May, and the tumour became larger and painful. This complication soon gave way to treatment, and she was dismissed on 22nd June *in statu quo*.

*Further History.*—After leaving Hospital the periods became reduced in duration to four days, and the tumour diminished slightly, so that on 16th August 1889 it was like a  $3\frac{1}{2}$  months' pregnancy, and the sound went in  $3\frac{1}{2}$  inches, while previously it had gone 4 inches.

The cellutic attack was very probably due to carelessness in introducing the intra-uterine electrode, which was very difficult, and often done in a hurry without sufficient gentleness.

CASE III.—M. F., æt. 36, unmarried, no children, admitted 12th May 1888, complaining of being too often unwell. Since the beginning of the year her periods came on every ten or fourteen days, and lasted four or five days, and for the three weeks previous to admission the flow was constant. Previously menstruation was of twenty-eight day type, and lasted seven days. A fibroid the size of a four months' pregnancy was found connected with anterior wall and right border of uterus. Sound went in  $3\frac{1}{2}$  inches.

After ten positive electro-cauterizations of 100 m̀a. for five minutes, the periods became normal in type and duration. The tumour was diminished to size of a three months' pregnancy, the sound still passing  $3\frac{1}{2}$  inches. Her general health greatly improved, and she gained 1 st. 5 lbs. in weight during the four months she was under observation.

*Further History.*—Not known, as she left Edinburgh.

CASE IV.—H. F., æt. 57, unmarried, no children, attended as an out-patient on 16th July 1888. Menstruation always regular. Menopause occurred at 50, after which time she saw nothing till July 1887, when bleeding recommenced at irregular intervals, and lasting two or three days. Bleeding had been almost constant for seven months previous to coming to Hospital. A large fibroid, the size of a five months' pregnancy, and affecting the anterior wall and right border of uterus, is felt. Sound passes  $4\frac{1}{2}$  inches.

*Treatment.*—Twenty-one positive electro-cauterizations, varying from 100 to 230 m̀a. for five minutes. This completely stopped the bleeding, and she has remained practically free from it ever since (6th July 1890).

The tumour was found slightly smaller and denser fourteen months after cessation of treatment, but had remained unaltered in size immediately after the treatment.



CASE V.—K. Q., æt. 39, unmarried, no children, admitted 14th August 1888, complaining that her menstrual periods had become very irregular and of longer duration. The uterus was found to be enlarged to size of a  $3\frac{1}{2}$  months' pregnancy by a fibroid connected with the anterior wall especially. Sound passed  $3\frac{1}{2}$  inches.

She received ten positive electro-cauterizations of 200 m $\grave{a}$ . for five minutes, with the result that the periods became normal in type and duration, but no change in the size of the tumour occurred.

*Further History.*—Eight months later she reported herself. The periods had remained normal, the type being twenty-eight days, and the duration three. Still no change in the size of the tumour.

CASE VI.—J. H., æt. 45, unmarried, no children, admitted 20th August 1888. Had been losing blood almost continuously for two and a quarter years previously in spite of treatment. She was exceedingly anæmic, and had a fibroid involving both anterior and posterior walls of uterus, and enlarging it to the size of a four months' pregnancy. The sound passed  $3\frac{1}{2}$  inches.

Eight positive electro-cauterizations were made of 180 m $\grave{a}$ . for five minutes. The bleeding was almost entirely arrested, there being scarcely a drop after the third application.

*Further History.*—Having left Hospital suddenly and secretly, it was impossible to ascertain her condition, but fifteen months later Professor Simpson and I found the uterine tumour diminished to the size of a three months' pregnancy and denser in consistence. The bleeding had remained very much diminished. Although by no means normal in its amount, she was able during the last six months to follow her occupation as a lady's-maid, a thing quite impossible before. More applications would, no doubt, have stopped it altogether.

CASE VII.—M. G., æt. 38, unmarried, one child fourteen years ago, was admitted 12th July 1888, suffering from a large fibroid, extending to within 2 inches of the umbilicus, which had caused great menorrhagia for two years, the bleeding being almost constant for the eight months previous to admission.

Twenty-five positive electro-cauterizations were made of 200 m $\grave{a}$ . for five minutes, but *without diminishing the bleeding in the slightest* or reducing the size of the tumour.

At the upper right corner of the tumour a rounded sensitive nodule was felt, and supposed to be the right ovary displaced. It was always much irritated by the abdominal plate, and became larger with the applications. Accordingly, on 8th October 1889, Dr Croom removed the appendages, and found that this diagnosis was correct, as the right ovary was displaced upwards to the upper right corner, and was cystic. This apparently was the cause of the failure with electricity—the applications merely aggravating her condition. The operation was entirely successful, and there has been no bleeding since (1st May 1890).

CASE VIII.—Mrs G., æt. 33, nine miscarriages, no full-time children, admitted 4th September 1888. For ten years previous to admission she suffered from menorrhagia, the periods lasting three to fourteen days instead of five; type had always been irregular, varying from two to five weeks. The uterus was enlarged to the size of a three months' pregnancy by a fibroid involving the anterior wall.

Thirteen positive electro-cauterizations were made of 200 m $\mu$ . for five minutes, and the periods again became normal in duration (four or five days), and occurred regularly every twenty-eight days. This continued for nine months after treatment was stopped. Since then there has been no report. The tumour was not diminished in size at all.

**B.**—The second group includes those Cases in which Pressure Symptoms were caused, and in each case the bladder functions were interfered with.

They are three in number. The first is that of Mrs A., æt. 37 (Case IX.), married thirteen years, sterile, admitted 9th May 1888, complaining that for the past three and a half years she had great difficulty in micturition, and frequently needed to use the catheter, especially at her periods. The pelvis was blocked with a fibroid, which reached half-way up to the umbilicus. After sixteen positive electro-cauterizations this difficulty was entirely removed, and the tumour was slightly diminished in size, but not to any extent. A year after she remained well.

The second is the case of E. G. (Case X.), æt. 45, unmarried, no children, admitted 25th May 1888, complaining that for four or five months previously she had suffered much from frequent desire to micturate—passing water every quarter of an hour. There was also slight menorrhagia. The pelvis was blocked with a fibroid, which reached  $3\frac{1}{2}$  inches above the pubes, and was connected with the posterior uterine wall, so that the cervix was directed upwards, and lay behind the symphysis pubis.

After sixteen negative electro-punctures, the bladder functions and periods became normal, and the tumour diminished in size, so that it could be lifted above the pelvic brim, and retained there by an Albert Smith pessary. Eleven months later this improvement was still maintained.

The third is Mrs D. (Case XI.), æt. 48, one child; was admitted on 11th August 1888, with a fibroid in the posterior wall of the retro-flexed uterus, which blocked the pelvis and caused great difficulty in micturition and incontinence of urine. She received seventeen applications—the first eleven being negative punctures, and the rest negative electro-cauterizations—with the result that the bladder disturbance was entirely relieved, and the tumour diminished in size, but very slightly. Ten months later she was still free of all

bladder trouble, and the mass which before blocked the pelvis was represented by a normal-sized uterus bound down to the back and retroflexed. Four months after leaving Hospital she had passed *per vaginam* a pear-shaped fleshy mass, which was no doubt a fibroid that had become extruded by the electrical current.

**C.**—The next group of cases is one in which **Pain was the chief complaint**, and this associated, generally, with a scanty flow.

This group embraces five cases, one of which has been included solely for convenience. It is that of Mrs P. (Case XVI.), æt. 41, sterile, who had a fibroid affecting the anterior uterine wall, reaching up to the umbilicus, and causing inconvenience by its mere size, although there was also slight pain in the abdomen. After twenty-five negative electro-cauterizations she felt greatly improved in health, the pain ceased, and the tumour diminished in size to the extent of  $2\frac{1}{2}$  inches vertically, and 3 inches transversely—the greatest diminution in the series. A year later this improvement was maintained, but there was no opportunity of ascertaining the size of the tumour.

The other four (Cases XII. to XV.) were cases of dysmenorrhœa due to subperitoneal fibroids. Three were in married women—all sterile—and one was unmarried. All were treated by negative electro-cauterization, and although in each case the menstrual flow was increased, the pain was not diminished. The tumour was diminished in one case from the size of a five months' pregnancy to that of a four months. In the other three not at all. So that in this category treatment was not successful.

**D.**—The anomalous group in which **Inflammatory Exudations** are the most important.

*Cellulitis Posterior binding down Uterus.*

CASE XVII.—Mrs W., æt. 28, had, four months previous to admission on 12th March 1888, caught cold at a period, after which time she suffered from pain, leucorrhœa, and metrorrhagia. The uterus was retroverted and bound down to the sacral hollow by cellulitic adhesions. A cotton-covered electrode was placed in the posterior fornix and made negative, and six similar applications were made, varying from 100 to 200 m $\mu$ . for five minutes. They were, however, too strong, and caused a shrinking and puckering of the vaginal mucous membrane. In other similar cases 50 m $\mu$ . or less was quite as efficacious, and did not cause any cauterizing.

The result, however, was satisfactory. The cellulitic deposit cleared up, the uterus became freely movable, and resumed its normal axis, so that on 30th May 1888 the pelvic condition was normal. The leucorrhœa and metrorrhagia were entirely stopped.

CASE XVIII.—*Subinvolution*. The sound passed  $3\frac{1}{2}$  inches. Seventeen negative electro-cauterizations of 50 to 100 m $\mu$ . for five to ten minutes had no effect on the size of the uterus, but greatly relieved a curious pain from which the patient had suffered for seven years, and which came on exactly a fortnight after each period.

CASE XIX.—*Pathological Antelexion, Peritonitis Posterior, and Endometritis*. Patient suffered much from pain in right iliac region, and leucorrhœa, which had resisted all kinds of treatment. Ten negative vagino-abdominal applications were made, similar to those in Case XVII., with the result that the pain and leucorrhœa were arrested, but there was no change in the physical condition in the pelvis.

#### *Cellulitis.*

CASE XX.—This is a most successful and instructive case. It is that of Mrs J., æt. 27, admitted 8th August 1888, with a large cellulitic deposit occupying, like a solid cake, the hypogastric and left iliac regions, and felt *per vaginam* to lie in front of the uterus, so that the bladder was almost surrounded. The left broad ligament was also filled with the exudation. Posteriorly, and to the right, the pelvis was normal. The uterus was normal in axis, and slightly retroposed by the mass. Three months previously she had a child, and it was to exposure to cold during the puerperium that the cellulitis was due. For these three months treatment had been tried in vain. To discount any effect the patient's altered circumstances might have, she was kept in bed for a month with the usual routine of douching, blistering, fomentations, and drugs internally, but the mass remained *in statu quo*.

Electricity was then tried, and sixteen applications made, the last four being negative electro-cauterizations, the others positive. The first was made on 3rd September, and the last on 23rd October 1888.

On the 25th she went home with the exudation practically entirely removed, there being the merest trace left as a thickening felt through the left fornix. She felt quite well, walked with perfect ease, and had gained 1 st. 8 lbs. within the seven weeks of electrical treatment.

CASE XXI.—*Cellulitis*. In this case the diagnosis was doubtful. The patient, æt. 50, had a swelling, apparently in the right broad ligament, the size of a three months' pregnancy, which caused pain and slight menorrhagia, and was variously diagnosed by gynæcologists as a fibroid, malignant disease of the ovary, and cellulitis. After four positive electro-cauterizations and seven negative vagino-abdominal applications the mass entirely disappeared and the menorrhagia ceased, so that I have little doubt it was the last mentioned.



CASE XXII.—*Inflammatory Deposit surrounding piece of Ovary.* A small nodule, the size of a walnut, could be felt through the right fornix, exquisitely tender to touch, and causing much pain.

Two years previously the appendages had been removed for pain, and no doubt the nodule felt was a small piece of the right ovary which had been left, and was surrounded by an inflammatory deposit.

Six negative vagino-abdominal galvanizations of 100 m $\mu$ . for five minutes were made, with the result that the nodule became distinctly diminished in size, and was scarcely painful on pressure. The pain in the right iliac region from which she had suffered entirely left her. Three months later, however, the pain returned as before, and she contemplated a renewal of the treatment.

CASE XXIII.—*Old Peritonitic Adhesions binding down Uterus and left Appendages.* C. J.,  $\text{æt. 24}$ , admitted 20th April 1888, complaining of severe pain in back and left iliac region. The left ovary was also prolapsed, enlarged, and very tender. Six negative vagino-abdominal applications were made which only increased the pain, and made no difference in the pelvic condition. This patient a year later was operated on by Dr Croom, when an attempt was made to remove the appendages, but she died of exhaustion a few days later.

#### RESUMÉ.

1. There are 23 cases in all, and in each the constant current has been employed, necessitating 304 applications. Of these 41 were punctures—always negative; 125 were positive intra-uterine cauterizations; 103 negative intra-uterine cauterizations; and 35 vaginal applications with non-metallic electrode.

2. Eight cases were hæmorrhagic fibroids; seven were treated by positive intra-uterine applications, and one by negative puncture, as it was impossible to get a sound into the uterus.

3. In all but one the hæmorrhage was arrested, and the improvement maintained for at least a year after treatment. For this one exception a distinct and satisfactory cause was found.

4. It therefore appears that hæmorrhage may be diminished by a form of application other than positive cauterization, more observations being required on this point.

5. There were three cases—four really, if we include one of the hæmorrhagic cases—in which pressure symptoms, especially connected with the bladder functions, required treatment. All were greatly benefited, the improvement being apparently permanent.

6. Next there is a group of fibroids in which pain, especially at the periods, is the chief symptom. These seem to have not at all benefited by the constant current either physically or symptomatically (perhaps with the exception of one, which was slightly improved). These were mostly subperitoneal, and were treated by negative intra-uterine applications.

7. Of the 16 fibroids treated, in no case was the tumour entirely removed; but in 11 there was a diminution in size. In 1 only was this to any great extent, the amount of diminution in the others being insignificant, though appreciable to the touch; 5 were entirely unaffected, except that no increase in size could be detected. In 2 of these 5 the symptoms were relieved, and permanently; in the other 3 there was no relief.

8. The kind of application made no difference, so far as diminution in size is concerned, *i.e.*, whether positive intra-uterine, negative intra-uterine, or negative puncture. In some the diminution was apparent after a few applications, in others not till several months had elapsed after cessation of treatment.

9. Obstinate cellulosic deposits were removed by the constant current, but it appeared to have little or no effect on peritonitic adhesions.

10. In one case of subinvolution, where pain was a source of constant anxiety, the pain was relieved; but no effect produced on the size of the uterus by negative intra-uterine applications.

11. One case of pathological anteversion with endo-metritis, which had resisted other remedies, was much improved symptomatically, but unaltered physically, by vaginal applications.

12. All patients, whether the pelvic condition was improved or not, felt much better in their general health after a few applications.

### THE METHOD OF PROCEDURE.

A few practical points that have cropped up from time to time may be useful.

The intra-uterine applications are nearly always made with a platinum electrode. But for hæmorrhagic cases which are not improving, or where the uterine cavity is expanded, so that the whole mucous membrane may not be cauterized by the platinum, *Apostoli's graduated carbon-pointed electrodes are indispensable.*

For puncture, steel trocars are used. Apostoli lays down the rule—1st, *That punctures should by choice be made when a portion of the tumour presents through the posterior fornix, and always of necessity when it is impossible to pass a sound into the uterus*; 2nd, *That punctures should never be made except through the posterior fornix*; and, 3rd, *The needle should be pushed into the tumour to the extent of only half an inch.* Sometimes I found that there was a distinct cellular deposit round the tumour, and that if by chance the trocar did not pass beyond this, great pain was caused by the application. Generally, a feeling of greater resistance will tell the operator when the tumour is reached; and it should be punctured to the depth of half an inch. These applications are generally negative, but may be positive if the negative ones are too painful.

Sometimes—as when we wish to cause the absorption of an exudation—the internal electrode is in the vagina, and not intra-

uterine. In this case its end is covered with cotton wool, to prevent cauterization of the vaginal mucous membrane. As it is, care must be taken not to use too high an intensity—50 m $\mu$ . or less is quite sufficient—lest a shrinking and corrugation of the mucous membrane result. The vaginal electrode is generally made negative; but it is the effect of the interpolar current which is desired.

Punctures, as a matter of precaution, are better made not oftener than once a week, by which time the previous wound is almost healed. Some puncture oftener, but I think it is attended with risk. Other applications may be made about five times in the fortnight.

With regard to the flat inactive abdominal electrode, which Apostoli still makes of sculptor's clay covered with tarlatan, I have made use of a form originally devised by Engelman of St Louis, viz., a plate of perforated zinc alloy, on which is quilted, about an inch thick, ordinary absorbent cotton. This is steeped in a warm, weak saline solution, and wrung dry just before application. Engelman advised that no salt should be put in the water, but this is a mistake. This form of electrode, like many others, is quite as good as the clay one, and far less disagreeable to the patient, as it is warm and clean.

Antiseptic douches should be used before and after each application.

I did not find a rheostat necessary, as the patients were quite able to bear the addition of one cell at a time.

It is well also to remember the caution with which all external measurements should be accepted as an indication of the size of a tumour. They must always be combined with bimanual examination.

So, too, measurements of the uterine cavity with the sound are apt to be very fallacious, and, alone, cannot be taken as evidence of the size of the uterine mass. This is owing to the great difficulty often experienced in passing the sound the whole way.

### Danger.

The danger attending the electrical treatment has been greatly exaggerated. With ordinary care, and with antiseptic precautions, there appears to me to be none. Some cases may require to remain in bed during the treatment, but the great majority can come for applications, and after resting for an hour or so, walk home with little or no inconvenience. Some of these cases came regularly a two or three hours' journey by train, and went home again after each application.

Septicæmia, as a result of puncture, is to be prevented by antiseptic douching, and *by making the applications not too frequently.*

In one of my cases cellulitis was set up, but, as already men-

tioned, for this I was entirely to blame, having used the sound without sufficient care and gentleness.

Certain minor effects are frequently caused by the applications. These are—

1. *Headache*, which commonly lasts for two or three hours. It is relieved by 10-grain doses of antipyrin. Dr Keith uses iodide of potassium.

2. *A feeling of bodily weariness and lassitude*, which soon passes off, giving place next day to a feeling of greater well-being than before, as a rule.

3. *A bloody discharge is often set up* by the introduction of the intra-uterine electrode. This soon stops, but may be followed for a day or two by a dirty-grayish, semi-bloody flux. And in bleeding fibroids, it may be that, for the first week or two of treatment, the flow is increased, so that one might give it up in despair, concluding that it had actually increased the hæmorrhage, whereas if the applications be continued a little longer it soon stops. This is of great importance, and should be borne in mind.

4. *Pain in the abdomen*, and especially over the fibroid, apparently due to a slight inflammation in the tumour, is not uncommon. It usually subsides in the course of twenty-four hours, and requires no treatment. A fresh application should not be made until it has entirely ceased.

5. It is generally supposed that a *sudden breaking of the current* is very disastrous. Twice, accidentally, it was broken at 200 mà., and once at 250 mà., but, beyond causing a slight shock, did no harm.

6. *Hæmorrhage may follow punctures*. This is easily arrested by hot douches or packing. It is to be avoided by puncturing through the posterior fornix only, and by feeling first with the tip of the finger to make sure that no vessel pulsates at the spot selected.

### Rationale.

It is generally admitted that the effects of the constant current may be divided into two groups: first, that due to the passage of the current between the two poles, the inter-polar effect; and, second, that due to the localized action of the active internal pole, according as it is negative or positive. The difficulty commences when an attempt is made to explain these effects. Turn for a moment to each of the categories of cases, and see how the facts correspond with the statements made.

Firstly, *the Bleeding Fibroids*.—Here, unquestionably, the positive metallic electrode in utero has the power of arresting hæmorrhage. It is clearly hæmostatic, as every one is agreed. But Cases I. and X., in which hæmorrhage was greatly diminished by negative puncture, show that the interpolar current may also be able to arrest hæmorrhage.



Secondly, *Relief of Pressure Symptoms*.—This apparently can be accounted for by the diminution in size of the tumour mass, which is a constant accompaniment. How this diminution may occur will be seen presently.

Thirdly, *the negative metallic pole* in utero does tend to increase the amount of blood lost at the periods, but this effect, in many cases, has been only temporary, and at any rate has made little difference in the dysmenorrhœa.

Fourthly, *How does Diminution in Size of the Tumour occur?*—This is the question which has excited most discussion and speculation, and is a point that can be satisfactorily determined only by experiment. Whether the electrical current can entirely dissipate a fibroid or not I am unable to say. I have never seen it happen, and Apostoli, with his vast experience, acknowledges its extreme rarity. But *diminution* in the size of the tumour *mass* is an undoubted fact. This is apparently an inter-polar effect entirely, but how it occurs it is very difficult to say. Eleven of these sixteen cases underwent diminution—slight, no doubt, but still appreciable. In only one case was it so great that it could not be accounted for partly by the contraction and hardening of the tumour which follow the applications, and which, therefore, leave it harder and slightly smaller than before. As a result of this, also, any nodules near the external surface of the uterus tend to become subperitoneal by being gradually extruded, and those towards the interior become submucous, often pediculated, and may be expelled per vaginam. This, then, is the first factor in the diminution. The second one, which is purely theoretical, is therefore of correspondingly little value. As it is closely allied to the action which takes place in the process of absorption in *cellulitic cases*, let us look at them for a minute.

Lastly, *Cellulitis*.—The inter-polar current is here most probably the sole agent, and it acts, apparently, by stimulating and hastening (but in what way is doubtful) the process of absorption which occurs naturally. This effect is perhaps produced through the medium of the bloodvessels or nerves.

May not a similar process partly account for the diminution of fibroids? Here it is necessary to suppose that the new growth is surrounded by a zone of inflammatory tissue either in the stage of congestion or of exudation, either of which conditions the passage of an electric current will modify, so that a diminution in the bulk of that zone will result, and so the whole mass become smaller.

I am not seeking to deny the possibility of electrolysis occurring in the new growth tissue. It seems, however, very improbable, but direct experiment is the only way either to confirm or disprove it, and such experiment must, on account of its nature, be almost impossible.

What I do wish to point out is this—that the diminution in the

size of the tumour in this series of cases is so slight comparatively, that it is not necessary to suppose that any destruction of tumour tissue has taken place. This may have happened; it is impossible either to prove or disprove it. But if such an explanation as the one I have given is possible and likely, then it will be quite enough to account for all the decrease that has occurred,—except, perhaps, in one case, No. XVI., where the reduction in size was so great as to make this explanation not quite so satisfactory. But even here it is quite possible.

Further, the constant current acts as a *tonic*, and *relieves pain*.

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## V.—SOME POINTS IN THE MORBID ANATOMY OF THE FALLOPIAN TUBES.

By F. W. N. HAULTAIN, M.D., F.R.C.P.E., Physician for Midwifery and Diseases of Women, Royal Dispensary, Edinburgh; Gynæcological Tutor, Royal Infirmary, Edinburgh.

(Read before the Obstetrical Society of Edinburgh, 16th July 1890.)

BEYOND being the occasional resting-place of an impregnated ovum, or the seat of fluid accumulations and malignant deposits, the pathology of the Fallopian tubes has been, until within the last twenty years, almost a blank, and it is not till within this time—thanks to Tait and others—that the clinical features of tubal disease have been recognised. Now, however, they occupy a position, both pathologically and clinically, second to none in importance to any of the female organs of generation.

The remarks which follow, therefore, are by no means intended to deal exhaustively with the subject, but merely to consider, in as concise a manner as may be, a few of the more common affections of these organs, and to show specimens in illustration of these conditions.

The normal Fallopian tubes are, as is well known, placed one on either side of the uterus, from the upper angles of which they spring. Passing between the layers of the broad ligament outwards, backwards, and downwards in a wavy manner, they at their distal or free extremities embrace their corresponding ovaries in a loop, a relation first pointed out by His, but which is, unfortunately, not sufficiently emphasized, the diagrammatic butterfly wing arrangement of the broad ligament and appendages giving a most erroneous but more freely accepted relation of parts. The lumen of the tube varies greatly, being at its uterine opening merely sufficient to allow of the passage of a bristle, but it gradually expands towards its distal or fimbriated extremity, where it opens into the peritoneal cavity. It has been therefore simulated to a trumpet, but it seems to me to be more like a closed umbrella without the stick. Microscopically its walls are found to be

formed by a muscularis composed of external longitudinal and internal circular fibres; while internal to these are a sub-mucous and mucous layer with a muscularis mucosæ, the cavity being lined by a ciliated columnar epithelium. The mucous and sub-mucous coats are thrown into a number of longitudinal folds, more apparent towards the distal extremity. The mucosa itself also is extremely irregular in outline, so that on transverse section it presents an arborescent appearance; and passing into its branch-like processes one may generally find slips of muscular tissue (muscularis mucosæ).

The tube as a whole lies loosely between the layers of the broad ligament, being attached to the peritoneum by a very delicate and loose connective tissue. Its serous covering is thus easily stripped off, and specially so in the later months of pregnancy, which is a point of much importance to be afterwards noted. The lumen of the tube being continuous on the one hand with the cavity of the uterus, and on the other with the interior of the peritoneal sac, affords the only example in the body of a direct continuity between a mucous and a serous lined space.

From this continuity of its lumen with the endometrium it will be evident how likely it will be to share in the inflammatory affections of that membrane, and how it must be a connecting link towards a similar condition of the ovary and peritoneum. It may be inferred, therefore, that an inflammatory state of the tube is generally secondary to that of the uterus, but that it may have a *de novo* origin in a few cases is probable, but, of course, difficult, if not impossible, to substantiate.

The lesions of the tubes to which I specially intend to refer are of three varieties,—inflammatory, contortive, and combined varieties.

The inflammatory diseases of the tube may, I think, be generally classified as of two varieties,—1st, inflammation of the lining membrane only, or endosalpingitis; 2nd, inflammation of the deeper structures (interstitial salpingitis).

Inflammation of the lining membrane of the tube may be, as in other epithelial-lined structures, catarrhal or purulent. The latter is merely an aggravated stage of the former, and the boundary line between them is impossible to clearly define. The minute pathology of the condition does not require to be gone into with detail, it being merely an example of the usual inflammatory process attacking epithelial structures, giving rise to excessive secretion from its surface, and advancing in severer cases to destruction of the epithelial cells and pus formation (pyosalpinx).

The milder variety is chiefly the result of extension of inflammation from an ordinary non-specific case of endometritis; while the purulent type, in many cases, is due to the direct upward spread of *acute* gonorrhœa (examples of which I shall mention later).

Pyosalpinx is, however, undoubtedly the frequent result of septic infection after labour, and is probably also now and then directly traceable as a complication or sequela of the zymotic fevers. That the latent gonococcus of Noeggerath, or decrepit coccus of Tait, is such a fertile source of pyosalpinx, as some authors would have us believe, has, I think, like other parts of this theory, yet to be proved. Should the lumen of the tube remain patent, the secretion is apt to escape into the peritoneal cavity and give rise to inflammation of the surrounding structures—perimetritis, peri-ovari-itis, and ovaritis. This source of these secondary inflammations, though well known, is, I think, by no means sufficiently emphasized, though it commends itself as being the most likely cause of these common ailments.

If, though the canal be still patent, cure of the inflammation does not take place, the process may extend to the deeper structures of the tube, and thus give rise to the second type before mentioned, viz.,—

*Interstitial Salpingitis.* This, from the inflammatory exudation and formation of new connective tissue, gives rise to thickening of the tube wall, which, from the specimen I show you, reaches occasionally to a considerable extent. This thickening of the tube wall has, in the large majority of cases which I have examined, been largely confined to the mucous and submucous layers, the muscular coat participating only in a slight degree; in fact, in some cases it is entirely unaffected, and may, indeed, become attenuated from the expanding pressure of the hypertrophied submucosa. (See specimen, Fig. 1.) In some cases the muscular coat becomes infiltrated and thickened, a condition which is associated with degeneration of the muscular fibres.



FIG. 1. — Transverse section through hypertrophied tube. Muscular coat much attenuated. Muscle represented by dotted line. (From nature.)

The epithelium, as a rule, in these cases is, as may be inferred, much changed and degenerated, but with the details of the minute morbid appearances I will not at present detain you.

Such then, briefly, are the varieties of inflammation of the tube itself. I have purposely left out the so-called perisalpingitis, which is nothing more or less than an inflammatory condition of the surrounding peritoneum, and comes more under the category of perimetritis. Naturally through it we have adhesions formed between the tube and surrounding structures—such as ovary, pelvis, etc.—which are of great clinical importance.

The lesion which now falls to be considered, and that more closely than the preceding, is *Contortion of the Tube*. This, as the name implies, is a twisting or bending of the tube itself, irrespective of inflammation or any other recognisable morbid condition. Its importance cannot be over-rated, for from it, and it alone, we must in a number of cases look for the distressing symptoms



which have brought the patient under the operator's care, and it is undoubtedly, so far as I have seen, the most frequent morbid condition of the tube met with. In many cases, though by no means all, it may be shown to be associated with inflammatory processes, which are as a rule, however, external to the tube itself, and are probably secondary, and it is to the contortion of the tube that we have to look for an explanation of the distress and other symptoms from which the patient suffered. The contortion, as a rule, is a spiral angular bending, so that on making a longitudinal section of the entire tube its lumen will be found appearing at different planes, here cut longitudinally and there transversely (see specimen, Fig. 2 B), while at the angles it may be completely occluded from apposition of its mucous surfaces.

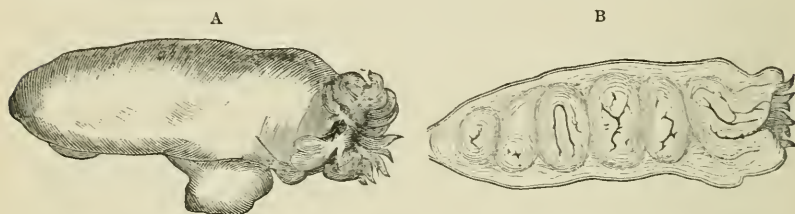


FIG. 2 A.—External appearance of much contorted Fallopian tube, with peritubal inflammatory thickening, giving appearance of uniform dilatation or thickening.

FIG. 2 B.—Longitudinal section through same tube, showing lumen of tube cut at different planes and at six different points. The peritoneum can be seen running smoothly over surface. (From specimen.)

On microscopic examination the structure of the tube will be found to be in every way normal, the epithelium ciliated and walls in no way changed, except slightly thickened in some cases, while the peritoneum will be seen to run smoothly over its surface without dipping into the angles formed by the bending of the organ. The tube thus appears to be curled up between the layers of the broad ligament like a snail within its shell. The external surfaces of the walls of the tube will be found in some cases in close apposition with almost no tissue between them; in others there may be some cellular connective tissue; while in those cases associated with severe surrounding inflammation there will be found a considerable amount of inflammatory connective tissue (Fig. 2).

To the naked eye, as is naturally to be expected, the tube is apparently shortened, and in some cases, from its smooth external surface, appears uniformly dilated or thickened (Fig. 2 A), an impression only to be corrected on section.

Here, then, we have a morbid condition of the tube of an extremely interesting nature, which alone can sufficiently account for those signs and symptoms, now so well known as indicative of disease of the appendages.

Sterility, the most important and universal sign of these con-

ditions, must be present in these cases, where the tube is occluded at the angles of bending; and even in these cases where perhaps the occlusion is not absolute, sterility is yet to be looked for, because we know from the experience of flexions of the uterus that there is no more potent preventative to conception than angulation of the genital tract, such evidently proving an almost insuperable barrier to the passage of the elements of generation. Again, the constant pain in the side, aggravated at the premenstrual periods, may, I think, be satisfactorily accounted for by the congestion which is sure to be set up by the bending of an organ of such great vascularity, and in whose immediate neighbourhood such a large venous plexus is present (pampiniform plexus). Further, it is more than probable that the surrounding inflammatory conditions which so frequently are associated with this contortion of the tubes are often secondary to the contortion, being the result of congestion, and are not the primary factor in the disease, as is supposed.

The ætiology of this lesion is difficult of explanation, but some help towards its elucidation may be acquired if one considers the development of the organ.

Before birth the Fallopian tube is in an exactly similar state to the lesion now being considered (Fig. 3), *i.e.*, it is twisted in a spiral manner (see specimen); and it is not till puberty, that by a gradual process of straightening it has acquired its normal undulating form.



FIG. 3.—Normal uterus (U) and Fallopian tubes (T) of eight months' foetus, showing spiral disposition of tubes. (From specimen.)

Probably, then, this morbid condition of the tube may be in some cases a continuance of the foetal state; but in the majority of cases it must be looked upon as a return to that condition, because the most frequent and best marked examples are met with in women who have previously borne children. Curiously also it is in these cases, which from their history seem to owe their origin to the puerperal state, that we get the large majority of examples of the lesion; thus it would appear as if there was an inherent tendency in the tube after pregnancy to return to its foetal state—a return which at first seems difficult to account for.

On examining, however, the Fallopian tube at full term, it will be found to have undergone a similar change to the uterus at that period, *viz.*, hypertrophy (see specimen). This hypertrophy is almost altogether one of elongation, the tube at term being from 6 to 8 inches in length instead of 4 to 5 inches as normal.

That this is hypertrophy and not mere attenuation is proved,

first, from the calibre of the tube remaining evidently constant, and, secondly, by the researches of H. Thompson of Dorpat, who, in a series of microscopic examinations of the tubes of pregnant rabbits, found the longitudinal muscular fibres individually to be hypertrophied and elongated to twice their normal length. They also were found to undergo a process of involution similar to that of the uterus.

From these interesting observations, then, one may naturally infer that if involution of these longitudinal fibres be incomplete or irregular, twisting of the tube will be the result,—its loose attachment to the layers of the broad ligament (as previously pointed out) offering little or no resistance to the tube curling up between them. On this I can at present only theorize, but the feasibility of such being the cause of the abnormality does not to me present an insuperable stretch of imagination.

In some cases, of course, I admit angulation of the tube is directly caused by the fixation and dragging of peritonitic adhesions; but the fact remains, that in a large number of cases no such adhesions are to be found, though the tube be curled and twisted to an advanced degree.

The statement that probably in many cases the inflammatory conditions of the tube so frequently found associated with its contortion is secondary to this contortion is supported by the clinical histories of a large number of cases, in which it will be found that the pain and distress of which the patient complained was of gradual onset, and was first noticed some weeks after she had risen from her confinement.

This is well illustrated in the history of the patient from whom the specimen I show you was removed.

Mrs S., aged 30, three children, youngest four and a half years, complained of constant pain in her side, much aggravated for two days before menstruation, and also during the flow. Pain commenced about two months after last confinement, and came on gradually; it is now, however, almost unbearable, and for two days before her periods she is totally unfit to perform her duties, and is confined to bed. She has tried all forms of treatment without avail. After operation she was completely cured (Fig. 2).

If in a tube thus contorted we have set up secondarily an endosalpingitis, the result will doubtless be retention of the secretion from the occlusion of the tube at its angles of bending, and we will thus have formed a hæmato-, hydro-, or pyo-salpinx, according to the nature of the secretion.

That this angulation of the tube is a cause of its occlusion in many cases I feel convinced; unfortunately, however, I have only had the opportunity of examining four cases of retained tubal secretion, but in two of these this undoubtedly seemed to be the direct cause. In support of this, if one looks at the drawings of a hydrosalpinx by Hennig or Boivin, what strikes one at once is an

angulation at the uterine end of the tubal swelling. Again, if one reads the paper of Lewers "On the Frequency of Pathological Conditions of the Fallopian Tubes,"<sup>1</sup> one is struck by the number of cases of dilatation of the tube, filled with fluid contents, which communicated with the uterine cavity by a still patent undilated portion of the tube,—a condition which seems to be quite inexplicable, unless it be accounted for by this angulation being the cause of the retention, and its having been straightened out in the process of exploration by the probe or bristle. The specimen I place before you also shows that dilatation (*D*) has begun to take place exterior to a sharp bend in the tube, the distal extremity of the tube having become blocked by the adhesion of the fimbriae to a blood-cyst. The dilated portion was filled with watery fluid.



FIG. 4.—Marked angulation of tube causing distal dilatation of its lumen (*D*), fimbriated extremity being adherent to (*B*) blood-cyst; (*O*) ovary; (*P*) peritoneum running smoothly over convolution. (From specimen.)

This curling of the tube also accounts for the series of loculi which one frequently finds a dilated tube to be made up of (see specimen, Fig. 5), a most interesting proof of how rigidly a contorted tube maintains its abnormal disposition in spite of the dilating force of the contained fluid, which one would naturally expect to straighten it. The loculated condition of the tube is said by Schroeder, Fritsch, and others, to be due to the inability of the tube to expand evenly between the layers of the broad ligament from want of space, a statement which seems quite insufficient when one considers the growth of a simple parovarian cyst in the same situation. This locular condition of the tube is also of clinical importance in showing how fluctuation may be difficult to detect in the diagnosis, and how the thrill may be absent.

As showing how angulation of the tube probably determines the morbid anatomy and course of endosalpingitis, the history of two specimens I here place before you is of much interest.

The one specimen which I show you is, as you see, a well-marked

<sup>1</sup> *London Obstetrical Society's Transactions*, 1887.



example of interstitial salpingitis, with marked thickening of the calibre of the tube (Fig. 1). The tubes on removal measured 3 inches in length, and were markedly patulous in their entirety, while from them could be squeezed a few drops of pus; they are evidently, then, examples of simple interstitial salpingitis. In the other specimen the tube wall will be seen to be markedly thinned and dilated, and when removed was found to consist of a series of loculi filled with pus. It measured  $1\frac{3}{4}$  inches—an example of encysted pyosalpinx (Fig. 5).



FIG. 5.—Transverse section through dilated Fallopian tube; (T) Pyosalpinx showing extreme thinning of walls and loculated condition of tube; (O) ovary. (From specimen.)

The history of the cases is as follows:—The patient from whom the specimens first described were removed was perfectly healthy till marriage, when she contracted acute gonorrhœa; three months after this time she complained of pain in the side, which continued to get worse till she was operated on after nine months' suffering. She never had any children.

In the second case, the patient had a child about sixteen months old, ever since which time she had been troubled with considerable pain in the sides, but which had become much aggravated within the last month. For the last four months she had a copious yellow discharge, and much scalding on micturition. On examination she was found to be suffering from acute gonorrhœa, while on each side of the uterus were distinctly felt cystic masses, the dilated tubes.

The two cases, then, are examples of tubal complications the direct result of acute gonorrhœa; in the first case the tubes were probably normal, healthy, and patent before infection, and through this means there was ready escape for the purulent secretion from the tube, whose walls eventually became thickened from the spread of the inflammatory process to the deeper structures. In the second case, however, the tubes were probably contorted before infection, and the secretion from the endosalpingitis was prevented from escaping, a dilatation and thinning of the tube being the natural sequence.

To prevent confusion in the description of like conditions, I would call examples of the first case by the name of pyosalpinx, while examples of the second might appropriately be differentiated by the title of *encysted* pyosalpinx.

To summarize before closing, the points I have endeavoured to bring before you are—

1st, That simple contortion of the tube is an extremely common condition.

2nd, That it manifests itself as a spiral angular bending.

3rd, That it may occur independently of any inflammatory or other apparent morbid change.

4th, That when associated with surrounding inflammation, it is more probably the cause than the result of that process.

5th, That it is either congenital or acquired, the former being a maintenance of the normal foetal condition, while the latter is frequently the result of sub-involution after pregnancy.

6th, When associated with a secondary endosalpingitis, it disposes towards encysted pyo- or hydro salpinx from retention of the secretion, and thus gives rise to the loculated condition of many of these tumours.

Lastly, in itself it is sufficient to give rise to those stereotyped signs and symptoms of disease of the appendages, viz., sterility and premenstrual dysmenorrhœa.

## VI.—NOTES ON THE SUCCESSFUL TREATMENT OF OBESITY.

~~Prepared for Publication~~ by W. ALLAN JAMIESON, M.D., F.R.C.P., Extra-Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Consulting Physician, Edinburgh City Hospital.

THE *raison d'être* of this brochure requires a word of explanation, since I make no claim to any special acquaintance with the measures best suited for the reduction of *embonpoint* either in men or women. My friend of more than twenty years' standing, Dr Turnbull of Coldstream, had invited me to spend a couple of days under his most hospitable roof. I had not failed to observe for some time past that there was a distinct process of shrinkage in bulk going on in Dr Turnbull, and had indeed watched the diminution with no small degree of anxiety. When, however, I quoted Sir Douglas Maclagan's well-known lines—

“Guidman, are thae some borrowed claes,  
An' are your ain awantin' ?  
Or ha'e ye fa'n awa frae these ?  
Is this the wark o' Bantin' ?”

Dr Turnbull assured me that there was no ground for concern on his account. He had tried Mr Banting's plan in former years, but it did not suit him. He certainly did get thinner, but his health, his spirits, and his enjoyment of existence on the convex surface of this little planet all failed, and he felt himself, and his friends feared even more strongly, that if the procedure were to be persisted in for any time, his premature departure into the unknown was inevitable. He had now, he informed me, fallen on a much more thorough method, one which while it was steadily decreasing his weight, was at the same time rendering him more active, and increasing his zest for life. He told me that many of those who had seen the improvement had urged him to publish the details of the system which had done so much for him, but he had an invincible objection to appear in print. He offered, notwithstanding,

to supply me with notes of the plan, if I would prepare them for insertion in the *Edinburgh Medical Journal*. As will be seen from what follows, given almost in Dr Turnbull's own language, another besides himself has already benefited.

James Downie, now aged 52, left Berwickshire for Leicestershire twenty-three years ago. He was then in good health. His habits were active, and he was strictly temperate. Six years subsequently he had an acute attack of gout, and was confined to bed for at least a month. From four to six times a year he had similar attacks, usually having a duration of two or three weeks. A couple of years later he had an excessively severe seizure, which necessitated his stay in bed for six months. He went, after he became convalescent, for six weeks to Buxton, where he greatly improved, but on the day after his return to Leicestershire he had a fresh outbreak. About fifteen years since he became utterly incapacitated for work, and had to resign his situation of stud-groom. He was now more or less confined to bed, or at best could not walk save with the aid of crutches. In 1885 he returned to Coldstream, but was seldom able to rise from his couch. From November 1887 to December 1889 he was constantly confined to bed and utterly helpless. During his illness he had consulted several physicians, and had taken an immense quantity of medicine. He believed that in the end of 1889 he weighed about 22 stones, and judging from his appearance, etc., his estimate was probably pretty nearly correct.

Reverting to Dr Turnbull's own case, in consequence of suffering from great dyspnoea, Dr Turnbull consulted Dr G. W. Balfour in June 1889. He then weighed 22 stones. He was advised to change his mode of living, and to place himself on a regulated dietary. Acting on his advice, Dr Turnbull says—"I breakfasted at nine as usual, took an egg, half a slice of toast, and a small cup of tea. At two a small basin of soup with a piece of toast. Dinner was at eight, when I had a little fish, the wing of a chicken, or an equivalent in mutton, with some green vegetables, and a very small bit of cheese with biscuit. After dinner I had half a glass of whisky in half a tumbler of water, and one cigar, partook of no soup nor pudding of any kind with dinner. Under this system I steadily lost weight, so that on the 5th of December last I found that I weighed 17 stones 10 pounds. I gave up drinking any fluid during the day, and my weight at present (in the middle of September 1890) is 15 stones 7 pounds—thus I have lost in the course of about fifteen months 6 stones 7 pounds.

"Having thus so greatly benefited myself, I felt very sorry to see poor Downie so utterly helpless, and therefore proposed to him that he should try my plan of diet. He readily agreed to follow my advice, being encouraged by seeing for himself the difference in my size. He adopted the method in December 1889, when he weighed, according to his own estimate, 22 stones. His exact

weight now is 16 stones 10 pounds. From being quite unable to assist himself in any way, he can now walk about with the help of a stick. He had been a great water drinker, so he suffered very considerably for nearly a month from thirst, but he resolutely refrained from yielding, and now he feels no desire for liquids. In nearly every detail his diet was such as I had adopted, only he had neither whisky nor tobacco.

"When, by the urgent advice of the late Dr Warburton Begbie, I gave up the Banting system of reducing corpulence and resumed my usual diet, I very rapidly became heavier than before. I am satisfied now that the easiest way to lessen obesity with safety is to reduce the quantity of food, and especially of drink, to a minimum. A moderate amount of butter and fat should be taken daily. Sugar and starch ought to be avoided as far as possible, while potatoes and bread must be refrained from absolutely. Vegetables, however, are not contraindicated, but those which are most suitable are onions, leeks, spinach, stewed celery, cauliflower, brocoli, Brussels' sprouts, asparagus, young cabbages, and such like. From much observation, I am quite confident that fresh salmon, properly cooked,<sup>1</sup> with no lobster or other sauce than the water in which it has been boiled, and eaten without potatoes or other objectionable vegetables, in moderate quantity is *a perfectly digestible fish*, notwithstanding all that has been written to the contrary.<sup>2</sup> An occasional warm bath is to be recommended, and some such laxative as a sedlitz powder may be prescribed along with the diet I have indicated. *Moderate* exercise only should be taken."

The plan of treatment which Dr Turnbull and James Downie have found so beneficial is one not altogether unknown, though the rationale may be more difficult to explain. Thus Dr Mitchell Bruce says,<sup>3</sup> "A copious supply of water increases nutrition up to

<sup>1</sup> Salmon, however, is seldom properly boiled, save on the banks of the river Tweed, or by those who are acquainted with the plan of treating the fish before boiling, and of cooking it, which prevails there. The fish, as soon as possible after having been caught, must be "crimped," that is, it must be split up longitudinally along the back, then cut crosswise into pieces of just such a size as to form a portion suitable to help to each guest. When the fish is to be cooked, the water in the fish kettle, to which twice as much as two conjoined hands can lift of salt has previously been added, is brought to the boil and the pieces of fish put in, arranged upon the drainer just as they are afterwards to be placed upon the dish. The water is again brought fully to the boiling point, and kept so assiduously by the cook for five minutes. At the termination of that period the fish-kettle is removed from the fire, and the fish taken out upon the drainer. If these details are attended to, the salmon will be boiled to perfection, and will be found not only perfectly digestible, but possessing a delicacy of flavour not brought out by any other method. To boil salmon whole, as is frequently done, is simply to do an injustice both to the fish and to the person who is to partake of it.

<sup>2</sup> Even Dr Burney Yeo, in formulating some rules of dietary in obesity, which correspond on the whole pretty closely with those laid down by Dr Turnbull, says, "Eels, salmon, mackerel, are best avoided."—*Food in Health and Disease*. Cassell & Co., 1889.

<sup>3</sup> *Materia Medica and Therapeutics*. Sixth edition, 1888, p. 151.



a certain point, especially the deposit of fat, and is therefore extensively employed in hydro-therapeutics." And again Dr Thomas King Chambers remarks,<sup>1</sup> "Where heart disease is complicated with obesity, especially if the fat is accumulated in the chest, the enforcement of a dry diet is still further to be viewed as imperative, inasmuch as it contributes powerfully to the reduction of the hypertrophied adipose tissue." In all cases a most important point would seem to be the separation of the ingestion of solids and of liquids in regard to time. Thus any liquid should be taken in the interval between meals, and not at the time of or along with solid food. The observation of a dry diet contributes greatly to the comfort of obese patients, and, as has been seen, is in itself curative.

## VII.—THERAPEUTIC NOTES.

By J. LINDSAY PORTEOUS, M.D., F.R.C.S. Ed., Yonkers, New York.

SEVERAL years ago, when Sidney Ringer first recommended drop doses of *Vinum ipecacuanhæ* for vomiting in pregnancy, etc., many, myself amongst them, thought this mode of administration savoured of Homœopathy, but in many cases I found the treatment successful. During the past few months Dr John Aulde of Philadelphia has written voluminously on the subject of repeated small doses of various drugs. His writings have had the effect of producing numerous articles on the subject from all quarters of the United States. All, without exception, bore testimony to the efficacy of the medicines administered as suggested by Dr Aulde. In my own practice I have given this mode of administration a fair trial, and I have no reason to regret having done so, as I have never failed to mitigate or cure the disease. In this country, where Homœopathy has a considerable hold, mainly on account of the smallness of the dose, any mode of treatment which reduces the quantity and also the taste to a minimum must tend to root out the illusionary practice. In the following remarks I will treat of a few of the drugs of which I have had practical experience, administered as advised by Aulde.

*Arsenite of Copper*.—This comparatively new drug is most powerful. Chemically, I believe, it can be detected in a solution as weak as 1 in 10,000. Dr Aulde, believing that the form of triturate tablets is the most suitable, had some made by those most excellent druggists, Parke, Davis, & Co., of Detroit, Mich., of the strength of  $\frac{1}{100}$  gr. and  $\frac{1}{2000}$  gr. each. In using the former he dissolves it in from four to six ounces of water, and gives one teaspoonful every ten minutes of one hour, then every hour if required. Given in this way I have never failed to relieve cases

<sup>1</sup> *A Manual of Diet in Health and Disease*, 1875, p. 342.

of cholera infantum, diarrhœa, and dysentery. In those cases where vomiting was a complication, it was almost invariably relieved within one hour after first pellet was given. I would strongly advise those of the readers of the Journal who have not used it to try it. In a synoptical report compiled from observations made by twenty-six physicians, who responded to the invitation of Dr Aulde to take notes, *nine* who tried it in typhoid fever found that it checked diarrhœa and controlled vomiting. All agree that it is a most valuable medicine in diarrhœa, dysentery, cholera infantum, colicky pains, and cholera morbus. The mode of action of this drug, as advanced by Dr Aulde, is this,—“It is evident that arsenite of copper possesses both alterative and antiseptic properties, and we may with propriety assume that it is a catalytic like arsenic itself, as certain changes are effected following its use which cannot be produced in any other way. My impression is, however, that when given in minute doses, as in the treatment of cholera infantum, diarrhœa, and dysentery, that the good effects are due to its influence upon the cells lining the walls of the intestine, doubtless acting through the nervous system. In all these diseases we have to contend with a poison. In health and disease poisonous products form in the intestines; but so long as the cells, acting as filters, prevent the diffusion of this poison, sickness is postponed. When the cells are depressed and cease to functionate, the poison is absorbed, the results being high temperature and accelerated pulse. Remedies like arsenite of copper and mercuric bichloride, which act the rôle of irritants when used in large doses, when used in minute dosage produce a gentle stimulation of the cells, and thereby increase their power of resistance. In other words, the function of cells is heightened (stimulated) through the presence of the medicament in the circulating fluid. The object of our treatment, therefore, should be to prevent the formation of an undue amount of the poison by appropriate diet, while the stimulation (irritation) of the cells is continued, being cautious at the same time that the medicine is not sufficient in quantity to destroy or arrest their function.”

*Gelsemium (assayed fluid extract).*—I have found wonderful benefit derived from the use of this medicine in minute doses—say five drops of the extract in four ounces of water, one teaspoonful of this every ten minutes for one hour, then every hour. When I first read of this mode of administration of the drug I was sceptical, but at the same time was determined to try it. I had an early opportunity, which presented in the form of threatened pneumonia. The condition of patient was as follows:—There were minute crepitations; pain in lungs; temp., 104°; pulse, 130; skin hot and dry. After two hours' treatment, as above, the skin became moist, temperature and pulse were reduced, and what appeared to be the commencement of an attack of pneumonia averted. If aconite in same proportion be added, the results are even more satisfactory.

The drug is powerful. Five drops may cause double vision and other toxic symptoms, but when given in minute doses these symptoms are avoided, and the beneficial effects of the medicine only are produced. Of course this medicine is not infallible, and Dr Aulde thinks that if it does not relieve within twenty-four hours it ought to be discontinued. He has found it of service in the neuralgic pains of dysmenorrhœa.

*Calomel* in small doses (gr.  $\frac{1}{50}$ ) is a sedative to the stomach, liver, and intestines, and favours the pouring out of the watery portions of the blood into the intestines. Small doses increase the secretions, large doses arrest them. Tablet triturates, each containing gr.  $\frac{1}{50}$ , prove useful in derangement of the alimentary tract in children often due to torpid liver. One must be given every half-hour till six or eight have been taken.

*Opium* given in small (gr.  $\frac{1}{3}$ ) repeated doses, contrary to general teachings, *increases* secretions—*e.g.*, ovarian or other reflex pain which interferes with secretion and causes constipation is undoubtedly relieved by them. By them pain is relieved to such an extent that the secretions are re-established and purgation is the result. If given in like doses in bronchitis, where there is great dryness and burning pain with every cough, after several small doses secretion will take place and the raw feeling relieved.

*Nux Vomica*.—This is recommended by Dr Aulde in the vomiting of pregnancy, which condition is frequently due to torpid liver. Ten drops in a wine-glassful of water, of which one teaspoonful is given every ten minutes for one hour, then every hour, has proved beneficial in the only case of vomiting of pregnancy in which I tried it. The stimulating effects are not only felt upon the terminal filaments of the pneumogastric, but this action is carried to the liver, and extends to the entire nervous system, and as long as there are no astringents given to arrest peristalsis, the bile is carried downwards, and the vomiting ceases. In typhoid fever, when it is lingering and vitality is at a low ebb, it proves useful given of same strength as mentioned above, only every hour during day, and every two hours during night.

*Nitro-Glycerine*.—This medicine has been in much favour for some time. I have found it particularly useful in one-drop doses of a 1 per cent. solution every five minutes during a paroxysm of asthma. If given in tablet form let the tablet be dissolved in the mouth before swallowing. Its action in this class of disease is as follows:—"Undoubtedly the tubes and air-vesicles fill up with mucus during the attacks. This is due to increased arterial tension. There is increased tension in the walls of the tubes, and thus the condition resolves itself into an arrest of the normal functions of respiration. The 'helmet headache' of Charcot is relieved by it relaxing the tension of the liver, as undoubtedly it is caused by this. By relieving the liver tension the bile is poured out, and ere many hours purgation will take place."

*Rhus Toxicodendron*.—This remedy Dr Aulde mentions as having been used as far back as 1798, eight years before Samuel Hahnemann dreamt his dream, and yet the Homœopaths claim it as their peculiar property. It was officinal in the British Pharmacopœia in 1836. Some years ago I used it in three-drop doses for incontinence of urine in children, but not with satisfactory results. This may be because the dose was too large. My experience of the drug is, that it is of great service in chronic rheumatism, especially that kind affecting a small portion of the body—as the shoulder, heel, ball of toe. It is likewise useful in sciatica and lumbago. One case will suffice to show the absolutely wonderful effects of the all-powerful drug. I was called to see a lady aged 42 years. She said she had suffered from a pain in her shoulder and upper portion of arm for three months. She was unable to raise her arm more than a few inches. I gave her six tablets containing each one-half drop of the German tincture of *rhus toxicodendron*—one to be taken three times a day. On calling next morning, she informed me that she had slept better the previous night than she had done for three months, and that the pain was almost gone. After taking three more tablets the pains entirely disappeared, and had not returned when last seen, four months after the *rhus* had been administered. It is likewise useful in rheumatic gout and lithemic tendencies, which are apt to appear during the progress of other diseases; in the neuralgic pains accompanying a lingering case of typhoid; also the paralysis which often follows in the wake of typhoid. Scaly forms of skin disease often yield to this drug, especially those dependent more or less upon ingestion of improper food, which ought to be forbidden during period of treatment. The tincture should be made from the fresh leaves gathered during the period of efflorescence, and selected from plants growing in the shade, or before the sun strikes them in the early morning. The active principle, toxicodendric acid, is very volatile, therefore the preparations made from the *dried* leaves must be inert.

Dr Aulde, in defending the administration of small doses, says—“The principle upon which minute doses of medicine act seems to me to be best explained by what may be called ‘Cellular therapy.’ I have in previous publications shadowed my views on this topic, but only recently have these views been sufficiently crystallized to warrant their presentation to the profession in compact form. We see that the pathological changes following the exhibition of lethal doses may be interpreted from a therapeutical standpoint, as in the case of mercuric bichloride, *rhus toxicodendron*, and arsenite of copper, all of which are known to be exceptionally active poisons. In the case of *rhus*, its effects are shown in the form of marked inflammatory changes in the integument, an illustration of the *remote* action of the drug. The direct action is upon the cells of the intestinal tract, the remote effect



being manifested in the subsequent hyperæmia and retrograde changes taking place in the cells of the integument. These effects have been referred to as the *specific action* of the drug, and it is the toxicological effect of such action that we wish to avoid in the treatment of disease. The knowledge thus acquired, while valuable from a toxicological point of view, it will readily be seen, is not of equal value as a lesson in therapeutics, unless rightly interpreted. In the case of arsenite of copper we have a most fitting illustration of cell activity in the treatment of various disorders of the intestinal tract. The exhibition of minute doses is attended with marvellous results in all cases, and at all seasons of the year, in every climate. That it is antiseptic cannot be doubted, but it is also an important alterative, producing effects through influences, which, except on the basis of cellular therapy, we are unable to understand or explain."

Such is the theory promulgated by Dr Aulde. In a future number I hope to be able, from practical observation, to give my experience of other drugs administered in small doses. Probably there is a great future for "Cellular therapy."

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#### VIII.—INTRODUCTORY ADDRESS, EDINBURGH OBSTETRICAL SOCIETY, SESSION 1890-91.

By D. BERRY HART, M.D., F.R.C.P.E., President.

GENTLEMEN,—In opening the session I have first to thank you for the very great and unexpected honour you did me in electing me your President. To have been one in your Presidential roll, where so many famous men have preceded me, I shall always count the greatest honour of my life, and my earnest hope is that I may so discharge its duties as to merit your approval and favourable regard.

This year we have to mourn the loss of Dr Matthews Duncan, who has been so long and intimately connected with our Society, and who, by his writings, conferred on it a reputation second only to that given by the illustrious Sir James Simpson. Dr Duncan's clearness of intellect and honesty of purpose gained him many most attached friends, while his kindness to the younger Fellows, and the great interest he took in their scientific work, make his unexpected death the greater blow.

To-night I wish specially to consider Dr Duncan's scientific work. It seems to me only fitting to do this, as most of his papers were read before our Society, and although time only can try all men's work, it will be of value to consider his just now, even at the risk of such an estimate being deemed premature. I do so, however, not in the spirit of a critic—that would be presumption—but as one who, like many others, derived the greatest benefit from the study of his writings.

Duncan's scientific work arranges itself naturally under the divisions of *Obstetrical, Statistical, and Gynecological*.

In his *Obstetrical and Statistical* work Duncan is seen at his best. His mind was essentially exact, one that needed facts before it could arrive at a conclusion, and one that could not, as a rule, speculate on insufficient data. His was the mind of the accurate physicist, and it is his great merit that he imported physical conceptions into Midwifery, and scorned with loathing the guess-work that blew up a frothy deduction only to disappear under the first whiff of common-sense. The "Researches in Obstetrics," and the "Contributions to the Mechanism of Natural and Morbid Parturition," fully establish his claims to stand in the first rank of scientific observers. The papers on "Uterine Statics" are admirable, and specially good is that on the function of the sacrum in relation to body weight. This matter is put with a clearness to which little has been added. In his other papers, especially in regard to the development of the female pelvis and the production of deformed pelves, he is less successful in his application of purely mechanical principles, but they are nevertheless full of interest and value. I may remark, indeed, on this point, that pure mechanics will not account entirely for such a thing as the shape of the female pelvis. There is something vital in addition, a type of growth whose factors we are not in a position as yet to define.

It is to Duncan, especially in this country, that we are indebted for correct views on the condition of the cervical canal during and at the end of pregnancy. He clearly demonstrated that it remained intact till the beginning of labour. His views on the behaviour, during labour, of the cervix and what we now term the lower uterine segment, were very correct, so that, as the result of these clear anatomical conceptions, his work on Placenta Prævia, especially his contributions "On the spontaneous Separation of the Placenta when Prævia," and "On the Source of Hæmorrhage," then, are in my opinion the best he ever wrote. His paper on "The alleged Synclitism of the Fœtal Head during Labour," and against the alleged Nægele obliquity at the beginning of normal labour, are models of terseness, accuracy, and scientific criticism. I know no papers on the mechanism of labour from which the young specialist can learn more, and none more worthy of his careful study. It is, indeed, impossible to do justice to Duncan's work on this head without unduly trespassing on your time, and I therefore pass over his papers, on the "Production of Face Cases," on the "Efficient Powers of Parturition," "The Expulsion of the Placenta," "Production of Inverted Uterus," with the remark that alone they would have thoroughly established his claim to rank as one of our best investigators. His monograph on "Fecundity, Fertility, and allied Topics," in which he had the valuable assistance of Professor P. G. Tait, is a monument of most valuable work, and gives facts and data of the greatest importance.

In all these papers we see pictured the bent of Duncan's mind—accuracy in facts, caution in defining the object and limits of his paper, carefulness in deduction, a determination to exclude all sources of fallacy, with careful criticism of previous observers. Yet he evidently had a speculative tendency, which not only crops up in his papers occasionally (*v. Papers on the Perineum*, p. 7), but entirely dominated a famous paper "On the Retentive Power of the Abdomen." Here his speculations and theories are beyond all bounds, and show Duncan in a rôle one would never, from his other works, have deemed him capable of assuming. The conceptions usually held of the physics of the abdomen are erroneous, and often grotesquely so, but Duncan gave in his consideration of this subject not the certain sound one would have expected from him, and no accurate physical ideas. Yet I know that he valued this paper highly.

As a gynaecologist Dr Duncan shone chiefly as a critic. I have no doubt his work on this subject will be severely criticised by some, and I admit that much of it is negative. In many respects, however, it has been most valuable. While there is very much in Gynaecology that we can regard with pride and admiration, there is a great deal which we can now only look on with a feeling of humiliation. The utter want of common-sense, to say nothing of the entire absence of pathological or anatomical basis, for much of the treatment of minor Gynaecology, is a matter of notoriety. As a critic of this, Duncan did most notable service. Undoubtedly he pushed his negative policy too far, as is well seen in his early opposition to ovariectomy, and the grudging he displayed to major operative treatment. Yet such conservatism is of the greatest use even in this; and Duncan's spirit, in a modified form, should be in our thoughts always in considering the question of treatment of disease.

His treatise on Perimetritis and Parametritis is a clear and accurate account of this matter at the time it was written, and was the product of much careful thought and clinical observation. His account of serous peritonitis is specially good and original, and not well enough known, as one sees even yet, when we read records of cases where evidently it was not diagnosed. In glancing over this work once more, what struck me most was the absence of all reference to sepsis as a cause of pelvic inflammatory conditions. Prophylaxis on this basis is not even mentioned, and consequently it is of historic interest, that in 1869, the most philosophical treatise on these subjects has no hint of what we now consider the great etiological factor in pelvic inflammatory conditions. In his after writings Duncan enthusiastically accepted Lister's great work. Our advance in treatment can be gauged by the fact that the only operative treatment recommended in long-standing pelvic abscess, and as a last resort, is tapping with a trocar.

In the clinical lectures on Diseases of Women there is much that

is interesting, but little that is helpful in treatment. Duncan had lived through the time when much of minor Gynæcology was meddling and bad, and when major Gynæcology was fighting for its existence. This seems to have engendered in him a suspiciousness of most of our alleged advances. There is little of the spirit of modern Gynæcology in the lectures, and he had evidently little faith in its future. In his fourth edition he says, "I believe the time will come when nearly all the diseases of women will be explained by a transcendental physics, including chemistry." That day is far off at present, and future generations must judge. Will the President of our Society in the 25th century be an expert in Quaternions and ether vibrations? Will it ever be possible to treat diseases of women by subcutaneous injection of antidotes to bacteriological products?

From what I have said it can be seen that I would place Duncan in the very highest rank as a scientific and clinical observer in Obstetrics, but I would at present rate his gynæcological work as most valuable for its engendering the spirit of caution, and even of suspicion to our alleged advances. This latter may seem scant praise, but I do not put it forward as such. The student of Gynæcology is heir to many facts and theories of whose value he is ignorant. What a misfortune if he has been so taught that he considers a stem pessary as natural and fit a treatment for an alleged flexion as a plastic operation is for a ruptured sphincter ani! A teacher must appraise and criticise facts and remedies, just as a sound lawyer would tell his client that the shares in some vaunted bubble company were worthless, and that his real monetary strength lay in some apparently sober investments. This is what one chiefly learns from Duncan's Gynæcology and Obstetrics—appreciation of a scientific method of investigation, a power of considering plausible statements critically, a reverence for natural processes as the real teachers of scientific treatment.

The record of Duncan's life and commanding personality is inspiring to all. What a record of steady, strenuous work! What an example of honest endeavour to get at the truth, cost what it might! How generous in his aid to younger scientific workers! We all count his connexion with our Society one of its greatest glories.

I do not at present say anything about the past session's work, except that it is of a very high order, and I have every reason to believe that this standard will be maintained during the present year.

The work already published in our *Transactions* has taken a high place in scientific Obstetrics and Gynæcology, and it is for us to maintain and raise that standard. One thing that has always struck me in connexion with our Society has been the kindly and generous help in scientific work and suggestion given by the senior members to the younger Fellows. Duncan had this spirit to the full, and no one has more of it than the teacher of so



many of us here—Professor Simpson. Another and more recent factor in advancing our prosperity has been the establishment of the Royal College of Physicians' laboratory chiefly by the strenuous work of Dr Batty Tuke. The Fellows of our Society have taken ample advantage of the great help it gives to any one anxious to investigate. No one can now say that in Edinburgh little facility is afforded for scientific work, and a heavy responsibility rests on all in our city who, with material and facilities for research, let the golden opportunity slip.

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### PROFESSOR KOCH'S REMEDY FOR TUBERCULOSIS.

Koch's great secret has been disclosed in outline. Though there is abundant room for theorizing in many directions, the sketch is clear and strong, and lets much of the completed picture be anticipated. In a delightfully simple style, one of the grandest therapeutic advances of the century is unfolded in an article entitled, "A Further Communication on a Remedy for Tuberculosis," which appeared in the *Deutsche Medizinische Wochenschrift* of November 14th, and which will live in the archives of the nineteenth century, along with the papers of Edward Jenner, James Simpson, Louis Pasteur, and Joseph Lister, when most of the ephemeral productions of the day have ceased to be remembered.

It would be obviously foolish to attempt to examine the principles, still less to offer any criticism of the details of a system which has been the evolution of months and years of close study and patient investigation. But it may be of advantage to summarize and emphasize some of the salient points—both positive and negative—of so vastly important a statement.

The operative part of the method is extremely simple, and does not differ materially from that of hypodermic medication, the injection being made into the skin of the back, between the shoulder-blades, and of the lumbar region. Those sites were selected on account of the comparative absence of local reaction manifested.

Of the constitution of the fluid little is indicated. Physically it is described as a "brownish, transparent liquid," which for use is diluted with distilled water. The original fluid keeps well, but the diluted fluid is liable to decomposition, unless used at once. Physiologically it is possessed of very special characters. In the first place, it has a far more potent influence—not merely relatively, but absolutely—on man than on some of the smaller rodents. Taking bodily weight into account, the 1500th part of what has no appreciable effect on the guinea-pig produces a powerful effect on the healthy human subject. So small a quantity as the quarter of a cubic centimetre produced, within three or four hours (in Professor Koch's own person), symptoms of pain in the limbs, lassitude,

cough, dyspnœa, and, later, shivering, nausea, and vomiting, with a rise of temperature to  $39.5^{\circ}$  C. ( $103.3^{\circ}$  F.) At the end of twelve hours these symptoms abated, and gradually disappeared. When the dose was reduced to  $\frac{1}{100}$ th of a cubic centimetre, the reaction on the part of the healthy human subject was reduced to a minimum.

But the apparent simplicity of the procedure ends here. For when the method is transferred to the subject of tubercular disease—in any of its forms—different and absolutely unexpected results are witnessed. With the smaller dose—the  $\frac{1}{100}$ th of a cubic centimetre—there is manifested both a *general* and a *local* reaction.

The *general* reaction commences from four to five hours after the injection, and the symptoms are very similar to those described in connexion with the larger dose— $\frac{1}{4}$  cubic centimetre—in the healthy subject. The patients appear to suffer little from the attack, which lasts from twelve to fifteen hours.

The *local* reaction shows itself *not at the point of injection, but where the tubercular focus exists*. This has been studied most easily in lupus. When the injection is made at the sites already mentioned, the diseased area—for example, the face—becomes the seat of violent action—swelling, congestion, followed by necrosis and crusting, and, finally, within days or weeks, by healthy cicatrization. The *extent* of local reaction is *limited with exactness to the diseased area*. Similar changes have been traced, more or less definitely, in connexion with tubercular bones and joints, and presumably, judged by results, in lung tuberculosis.

The explanation of this extraordinary “elective affinity” cannot be discussed till, on the one hand, the constitution of the fluid is known, and, on the other, a thorough examination of the local histological changes has been reported. But it seems proved that the remedy does not destroy the tubercle bacilli, but rather the affected tissue.

It will be recognised, then, that a twofold value may be predicated of the method—(a) diagnostic, (b) curative.

The *diagnostic* aspect is many-sided. It is shown that with a minimal dose the specific reaction which has been described occurs *in the tubercular subject only*. Patients suffering from other diseases—e.g., syphilis—are as insusceptible as is the healthy subject. Hence a positive or negative result following on such a dose will prove or exclude tubercular disease. But, further, given a tubercular subject, it is shown that the dosage of the fluid may be rapidly increased, apparently not because the system becomes more tolerant—the change is too rapid for this—but, presumably, because, with each injection, the amount of tissue capable of reaction is diminished. When a point has been reached at which the reaction ceases to differ from that shown by the non-tubercular subject, the diagnosis may be given that the tuberculous tissues have been destroyed and a cure effected.

The *curative* value of the method seems clearly established in

the more superficial and better localized forms of tuberculosis. Subjects of inveterate lupus have been restored to health, recent and slighter cases of glandular, bone, and joint tuberculosis have been cured, and severe cases improved. Patients suffering from pulmonary tuberculosis appear to be much more susceptible to the influence of the remedy, and the dosage requires, accordingly, to be relatively less at first, and to be graduated with more care. But it is affirmed that "within four to six weeks, patients under treatment in the first stage of phthisis were all freed from every symptom of disease, and might be pronounced cured. Patients with cavities not yet too far advanced improved considerably, and were almost cured." And even in advanced cases, where objective proof is more difficult, expectoration decreased, and the subjective condition improved. Concerning pulmonary phthisis—especially in the later stages—Professor Koch is guarded in statement throughout, indicating what must commend itself to the impartial observer, that it is still too early to speak of *lasting* cure. But, fairly enough, it is suggested, that even if *immunity* is not obtained—a possibility which is not excluded—the relapses which occur may be treated with an equal measure of success.

The results in pulmonary conditions are pregnant with suggestion. On the one hand, they increase enormously the responsibility laid on medical practitioners to *diagnose phthisis in its initial stages*. Advantage must be taken of all available means, including, it may be—if further experience confirm the validity of the test—Koch's diagnostic injection. In particular, no physician can afford to look lightly on the objective proof afforded by a thorough examination of the sputum, whose significance has hitherto in some quarters been disparaged. He who omits such recognised helps must be regarded as "guilty of the most serious neglect of his patient, whose life may depend on the diagnosis and the immediate application of the specific treatment."

Professor Koch makes it abundantly clear that the adoption of the principles and practice, which he advocates, in no sense implies an abrogation of other auxiliary means. On the contrary, his teaching recognises the necessity of conjoining the new with all thoroughly accredited methods of treatment, and it discloses an immense vista of possibilities of therapeutic advance along many lines, towards the consummation of which the physician and the surgeon will in future, more than ever, be called on to combine.

Whatever may be the final judgment on the practical outcome of this admirable production of brilliant conception and most painstaking intellectual effort and skill,—and time alone can pronounce this,—not even the coolest critic will grudge the pæan of praise and gratitude in which a groaning and travailing creation now celebrates the latest triumph of the discoverer of the Tubercle Bacillus.

R. W. PHILIP.

November 17th.

## Part Second.

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### REVIEWS.

*The Pulse.* By W. H. BROADBENT, M.D., Fellow of the Royal College of Physicians, Senior Physician to, and Lecturer on Clinical Medicine in the Medical School of St Mary's Hospital. London: Cassell & Co., Limited: 1890.

WHETHER in respect of extent of erudition, wealth of observation, or clearness of description, this is a noteworthy volume. Although its subject is the pulse, to say that it is entirely devoted to the pulse would be to convey a false impression of the work, as it not only takes up the pulse from every conceivable point of view, but also brings into relationship with it such a mass of physiological and pathological knowledge as to render its teaching of the most far-reaching character. Throughout the whole work the author carefully avoids the methods of the doctrinaire; from the beginning to the end of the volume his key-note is personal observation. In this and in all respects he shows himself to be a worthy follower of his late teacher and colleague Francis Sibson, to whom in his preface he gracefully acknowledges his obligations.

We do not enter upon a criticism of the work in a light spirit or without careful consideration, and we have read and re-read it with increasing admiration. In saying this, however, we do not mean to say that we entirely agree with all the teaching of the author, but even in regard to points on which we are entirely at variance with him, we are constrained to admit the keenness of his observation and the cogency of his reasoning. The work begins with a short summary of the history of observations on the pulse, interesting in every way, but more especially so in the account of Galen's teaching. This serves as an introduction to the causation and significance of the pulse, the methods of observing the pulse, the relation of the heart sounds to the pulse, and changes in the condition of the pulse.

The author's remarks on the sphygmograph are worthy of careful attention. He makes it an object throughout the work to describe the variations in the character of the pulse as they are felt by the finger, and relegates the sphygmograph to a position of secondary importance. To the objection that the distinctions are too refined for the sense of touch, his answer is that every important variety of pulse revealed by the sphygmograph was recognised, described, and named before the Christian era. He states his conclusion that it is not specially useful in practice, that it is rarely necessary for diagnosis, and scarcely ever to be trusted in prognosis. To any one who has worked much with the sphygmograph these remarks will appear perfectly justifiable, and to such an one his



further statements in regard to the personal equation of the observer will also seem justifiable, for, as he says, "if any special result is expected or wished for, an enthusiastic investigator can obtain it, and may without the least conscious intention twist facts in the desired direction." We may further mention with approval his criticism of the instruments of Pond and Dudgeon, as providing "a gratuitous provision for exaggerations and for extraneous jerks and vibrations."

A most admirable chapter is that which is devoted to the heart sounds in relation to the pulse, in which the clinical acumen of the author is perhaps most acute, and his criticism at its keenest. But in this chapter he makes a statement which is extremely questionable in regard to reduplication of the second sound. Referring to this subject he remarks, "It is almost always the pulmonary second sound which is displaced, whether forwards or backwards, as regards the aortic sound." The reason which he adduces is that reduplication of the second sound can be induced by merely holding the breath, but this argument has but little bearing upon such cases as renal disease, to which he refers as presenting this symptom.

His observations upon Cheyne-Stokes breathing are very interesting, although somewhat one-sided. He attributes the phenomena to high arterial tension, basing his opinion upon the facts that Cheyne-Stokes breathing is most frequently met with in uræmia, in which high tension is very common; that it is often found when dilatation of the left ventricle is giving rise to the symptoms which lead up to a fatal termination, which condition of the heart is for most part due to resistance in the peripheral circulation; and that it is also found in dilated aorta, which is usually an effect of protracted high pressure. In this train of reasoning the premises are insufficient. We may well ask how the author would account for the occurrence of Cheyne-Stokes breathing after severe hæmorrhages, or in the later stages of febrile disorders, or after the administration of narcotics and nerve depressants, which have no effect upon the arterial tension. Such instances of periodic breathing show the need there is for a broader and more scientific theory, based upon the observations of Luciani, Rosenbach, Mosso, Marckwald, and many other investigators who have in recent years thrown a flood of light upon this symptom. In a work of this kind, strongly marked by the individuality of the author, there are necessarily many points upon which there must be considerable diversity of opinion, and we have considered it our duty to refer to such divergence of views. The impress of this individuality, however, increases the value of the volume, and we are convinced that no one will rise from its perusal without learning something new, or finding an original light thrown upon facts with which he may long have been familiar.

*Clinical Diagnosis: the Bacteriological, Chemical, and Microscopical Evidence of Disease.* By Dr RUDOLPH V. JAKSCH, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the German University of Prague. Translated from the Second German Edition by JAMES CAGNEY. With an Appendix by WILLIAM STIRLING, M.D., Sc.D. London: Charles Griffin & Co.: 1890.

THIS is a work which has in its native country, and, in fact, throughout Germany, earned a great reputation. It differs from the ordinary books which deal with the subject of diagnosis, inasmuch as it is almost entirely devoted to a description of methods applicable to pathological physiology. In this respect the title of the book is perhaps erroneous, as the matters which are discussed can hardly be termed strictly clinical. The work is one which is better adapted to be a guide in carrying out many of the researches of the pathological laboratory than to be a direct aid in conducting observations at the bedside.

It begins with a description of methods of examining the blood. This is followed by methods of investigating the buccal secretion, the nasal secretion, and the sputum. The gastric juice and vomit, the fæces, and the urine are afterwards discussed; the investigation of exudations, transudations, and cystic fluids, the nature of the secretions of the genital organs, and the methods of bacteriological research, are somewhat more briefly described; and the work ends with a short appendix by Stirling, which is devoted to a variety of different subjects, ranging from such a matter as an account of Abbe's condenser and apochromatic lenses to Grainger Stewart's observations on albuminuria, and a case of chylous ascites recorded by Whitla.

The work for the most part entirely merits the excellent reputation which it has already obtained in Germany. We cannot in this place enter upon a detailed examination of its contents, and must content ourselves with a brief reference to some of the more important practical subjects which are described. In the section on the blood, the paragraphs giving the spectroscopic appearances under different conditions are exceedingly good, and the micro-organisms present in the blood in different diseases are well worked out.

The chemical examination of the gastric contents seems to be one of the best parts of the book, and it may be useful to mention that the author, from the analysis of the contents of the stomach in a great number of cases of cancer, has found that in many no traces of free hydrochloric acid could be shown by the coloured tests; but its absence is by no means so constant as to warrant an absolute diagnosis solely on this ground. In other conditions, moreover, the hydrochloric reactions may also fail. In conjunction, however, with the other clinical symptoms of cancer, the

absence of the hydrochloric reactions gives important evidence of the disease. The secretion of pepsin and of the milk-curdling ferment appears to be carried on to the end, and yet the gastric juice in cancer seems entirely to lose its digestive property.

We must confess to a feeling of disappointment on reading the description of the methods for determining the presence of proteids in the urine. Although the description of the different tests for the various proteid bodies is adequate, if somewhat brief, the grouping of the different tests in such a way as to allow of a rapid, and at the same time complete, determination of the various proteids is by no means so good as the systematic method of Noël Paton which appeared in this Journal some two years ago. We are somewhat surprised, further, to find that the method of Brandberg for estimating the quantity of albumen is considered to be more accurate than that of Esbach, as from observations conducted in this country Esbach's method is, within certain limits, extremely reliable.

Taken as a whole, however, the work possesses a high value, and will prove of extreme use to those who are engaged in the investigation of chemical and microscopic details connected with diseases. There is a most admirable bibliography, extending to 31 pages, which speaks for indefatigable perseverance on the part of the author, and which will prove of the utmost service to the pathological worker.

A word of praise must be given to the translator for the admirable manner in which he has performed his self-imposed task. He has conferred a benefit upon the medical profession in this country not only by enriching our literature with a valuable foreign work in an English dress, but also by producing a translation which is, notwithstanding the intricate technicalities which it contains, marked by a noteworthy elegance of style.

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*The Causes and Prevention of Phthisis: The Milroy Lecture for 1890.* By ARTHUR RANSOME, M.D., M.A., F.R.S., Hon. Physician to the Manchester Hospital for Consumption and Diseases of the Throat. London: Smith, Elder, & Co.: 1890.

THE four lectures which form this volume afford an admirable and suggestive summary of our present knowledge regarding the etiology of phthisis. Starting with an acceptance of the tubercle bacillus "as the essential specific element in the causation of phthisis and other tubercular diseases," Dr Ransome discusses most succinctly the affinities and geographical distribution of tuberculosis, the predisposing causes, the question of immunity, and, finally, the prevention of phthisis. The author is a supporter of the view which, since the Berlin Congress, may now be regarded as internationally accepted, that the only way of rightly meeting the present necessities of the community and of effectively com-

bating the deadliest of our enemies, is by the establishment of special hospitals and sanatoria for the reception of consumptives of all classes. An interesting comparison is drawn between the pathology and affinities of tuberculosis and those of leprosy. Though the question of identity can hardly be raised, yet the number of points of similarity, as has often been remarked, is striking, and may yet bear fruit when our attempts at nosological classification become more thorough.

The lectures will repay careful perusal, and none the less because they breathe a hopeful, sanguine spirit, stimulating to work along every line, in the belief that, as leprosy has been banished from our country, so the different forms of tuberculosis may ultimately disappear.

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*The Natural History and Relations of Pneumonia: its Causes, Forms, and Treatment.* A Clinical Study. By OCTAVIUS STURGES, M.D. Cantab, F.R.C.P., Physician to the Westminster Hospital, etc.; and SIDNEY COUPLAND, M.D. Lond., F.R.C.P., Physician to the Middlesex Hospital. Second Edition. London: Smith, Elder, & Co.: 1890.

IN the fourteen years which have elapsed since the first edition of this work was written, the subject of pneumonia has been much discussed, and new facts have come to light. Of most of these the authors have taken cognizance, and have discussed the significance in a fair spirit, maintaining a just balance where opinion may still be looked on as more or less equally divided. Thus, with regard to the etiology of the disease, the micro-organismal origin has been considered at some length, and the relative claims of competing organisms judicially examined. The authors conclude their discussions of this department by adopting the logical position, in view of conflicting statement, viz., "that, so far as regards the bacteriology of pneumonia, there is, as yet, hardly sufficient evidence to establish the dependence of the disease upon one specific virus," but that "it must be considered as proved beyond dispute that inflammation of the lung, like inflammation in general, is associated with the growth and development of certain micro-organisms, which are more virulent in some animals than in others," and that "these organisms may infect organs and tissues, since they may be found in the inflammatory exudations and products of these parts, secondary to an attack of pneumonia; whilst the fact that these same microbes occur in inflamed serous membranes and elsewhere, apart from pneumonia, would show that their pathogenic action is not limited to this disease. Even then, however, it would still be possible to consider that their association with pneumonia is accidental rather than causal—that they are epiphytes on a soil already prepared for their sustenance."

If we accept—and there is much reason for doing so—the bac-



teriological origin of pneumonia, the authors are certainly right in maintaining that "it would seem as if we should be compelled to abandon the notion that pneumonia is always of the same nature, and admit that it may be evoked by more than one poison."

As regards treatment, the work will be found of permanent value. The authors recognise the fact that one method of treatment cannot be held up against another from the experience of one series of cases merely. Putting it broadly, cases of pneumonia are separable into two types. There is the easy-going type, which shows well-marked symptoms and physical signs, but where the vital forces are not gravely disturbed. Such cases, experience teaches, tend towards spontaneous recovery, and, necessarily, expectant treatment will seem the more successful. But all who have taken the trouble to observe will admit the existence of another group, fortunately smaller in number, whose treatment demands the closest watching and much wisdom in the discriminating and timeous use of drugs and other therapeutic agencies. For both groups the question of medical interference is discussed with fairness and sufficient fulness, the authors prudently emphasizing the "broad principles of conduct" which universal recognition and experience have enforced.

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*Practical Guide to the Demonstration of Bacteria in Animal Tissues.*

By Dr H. KÜHNE, Wiesbaden. Translated, with the consent of the Author, and Edited by VINCENT DORMER HARRIS, M.D. (Lond.), F.R.C.P., Demonstrator of Physiology at St Bartholomew's Hospital; Physician to the City of London Hospital for Diseases of the Chest, etc. London: Baillière, Tindall, & Cox: 1890.

THIS small volume is eminently practical, and contains an excellent account of most of the more recent developments of histological methods. Dr Kühne's work is well known abroad, and there is abundant reason for the editor's belief that its translation will prove of value. The reproduction, which is faithful, has been enriched by supplementary notes. In these, one or two of the more recent modifications might with advantage have been included, such as, for example, the Ziel-Neelsen method for the staining of the tubercle bacillus, which, for clinical purposes at least, is to be preferred to any of those referred to in the text. The appendix details the composition of the chief staining fluids, and gives a description of several of the better known microtomes.

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*Lymph Stasis, or Retardation of Lymph, as an Element in the Causation of Disease, especially in regard to Scrofula and Tuberculosis.* By WAYLAND C. CHAFFEY, M.D. Lond. Graduation Thesis, with Appendix. London: H. K. Lewis: 1890.

THIS essay is admittedly speculative and hypothetical for the

most part, but it is none the less suggestive on that account. The author has drawn attention to an important factor in the production and progress of disease, which is sometimes apt to be lost sight of. At the same time there is a risk of theorizing too much, and in the present instance there appear to us indications of theorizing at the expense of accepted fact. But while exception must be taken to the position adopted in some parts, there is much worthy of consideration to be deduced from the extremely careful digest and abstract of cases which have been arranged to illustrate the subject.

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*Wanderings in Search of Health ; or, Medical and Meteorological Notes on Various Foreign Health Resorts.* By H. COUPLAND TAYLOR, M.D. London: H. K. Lewis: 1890.

*Madère, Station Médicale Fixe.* Par Le Dr C. A. MOURÃO PITTA. Paris: Felix Alcan: 1890.

*Madeira and the Canary Islands: A Practical and Complete Guide for the Use of Invalids and Tourists.* By A. SAMLER BROWN. Second Edition. London: Sampson Lowe, Marston, Searle, & Rivington: 1890.

*The "J.E.M." Guide to Davos-Platz.* Edited by J. E. MUDDOCK, F.R.G.S. Fourth Edition. London: Simpkin, Marshall, Hamilton, Kent, & Co., Lim.: 1890.

THE question as to the most suitable climate for any particular invalid is one by no means easy to settle. This is particularly the case when the individual seeking the physician's advice suffers from commencing phthisis, or any of the other chest affections which are unfortunately so common in our islands. At one time Madeira was regarded as the only earthly paradise for the poitrinaire, with the inevitable result that a reaction took place, leading to its desertion by many invalids for whom it was probably remarkably well suited, but who felt themselves unable to resist the temptation to try the "kill or cure" of those high altitudes which have been regarded with so much professional favour of late years. Madeira has, however, begun to advance its claims anew, with the result that a class of invalids for whom high altitudes have been found unsuitable is again seeking there, as well as in the Canaries, that measure of health and comfort which they cannot secure at home. On the other hand, physicians now understand better the kind of cases for which the high altitude treatment is most suitable, and there seems to be little doubt that when beneficial results are obtained from it, they are more likely to be permanent than those obtained elsewhere or by other methods. Of course it will be understood that we are now speaking of climatic treatment, and without reference to inoculation or injection methods, the details of which have yet to be published.

Of the works on our list, the one which we consider of highest

importance is that by Dr Coupland Taylor. He has the advantage over many writers on health resorts that he is able to look at these from the point of view of the invalid and health seeker as well as from that of the physician and meteorologist. He has tried the ocean, and made investigations during prolonged voyages on the healthy and on the sick. He has submitted himself to the Alpine cure, in summer in the Engadine and during the winter in Davos. He has wintered in the Canary Islands, and lived for more than a year in Madeira. With the resorts on the Western Riviera he appears to be intimately acquainted. What he has to say on these places cannot fail to be of value, and the volume he has produced may be pronounced interesting and almost unique. In his introduction there are some sensible remarks on the folly of expecting to find a perfect climate on this earth, and throughout his book he has endeavoured honestly, and without prejudice, to lay before his readers the disadvantages as well as the advantages of the various resorts in which he has sojourned. Of the ocean for phthisical cases he speaks with scant favour. It is true that it works wonders for some patients, yet the discomforts that are so frequently attendant on voyages in sailing ships, and the sudden temperature changes in steamers to the Antipodes, are not to be lightly risked by the ordinary invalid. If the sea is felt to be best for any one, he should go in a steam yacht or pleasure steamer, and be careful not to over-exert himself in the various ports at which the ship calls. Dr Taylor's experiences of the Engadine have led him to the belief that it should be more taken advantage of by curable cases of phthisis as a summer residence, provided that those parts exposed to the wind and dust are avoided. In the chapter on Davos there is a careful discussion of the influence of altitude, humidity, and temperature on phthisis. He admits that the Alpine winter climate shows a greater percentage of cures than any other, but argues that it ought to do so from the class of cases sent,—a remark which, indicating as it does that suitable cases are sent there, seems to us rather creditable to the profession. The account he gives of Madeira is almost enthusiastic. He considers that it is too much neglected, but admits that its "climate does not seem to be nearly as effectual in checking cases of primary tubercular deposit, and in removing such consolidations as the Alpine climate." In the Canary Islands he spent seven months, and does not seem to regard them quite so favourably as Madeira. Following on the longer accounts of those places we have mentioned are shorter descriptions of the Sanitaria on the Western Riviera, of Bournemouth, Arcachon, Pau, Eaux Bonnes, Meran, Algiers, and various American and Australasian resorts. Dr Taylor's volume cannot fail to be helpful to physicians who feel their responsibility when called upon by their patients to recommend the health resort that is likely to be most suitable for their particular ailments.

Dr Mourão, the author of the second work, is principal physician to the Hospital for Diseases of the Chest in the town of Funchal. He gives a large amount of interesting information, but when he comes to speak of Madeira from the point of view of the physician, he prefers to quote the opinions of others, on the ground that "*notre opinion personnelle pourrait être suspecte car—vivo et scribo in acre madeirensis.*" Some of his conclusions strike one as being rather sanguine, and his hint that even hopeless cases might be sent to Madeira will hardly commend itself to medical men in this country. Such cases, as well for their own sakes as for those of more healthy invalids, ought not to be sent to health resorts. Dr Mourão's book taken along with Dr Taylor's must attract greater attention to the island than it has received for some years.

Mr Samler Brown's guide is a purely popular one. It contains maps and useful information for visitors; but its value would have been enhanced by an index, even though it does not extend beyond 130 pages.

The "*J.E.M.*" *Guide to Davos* is of a similar character, but intended for those seeking the Alpine cure. It is lively and entertaining, and that it is popular is evident from the fact that it is in its fourth edition. A very interesting feature is the plan of the recent scheme of drainage, by which the Platz has been so much improved. We are surprised to find that Mr Muddock considers it necessary to warn visitors that the so-called Swiss honey is artificial, and a "sham and a fraud." It was well known to be artificial when we were there, but that did not prevent our enjoying it. To our mind it has very much the same relation to the real article as margarine has to butter, and it is absurd to talk of it as likely in some conditions to prove decidedly harmful. The same might be said of almost any food.

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## Part Third.

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### MEETINGS OF SOCIETIES.

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#### MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

##### SESSION LXX.—MEETING I.

*Wednesday, 5th November 1890.*—Dr CLOUSTON, *Vice-President, in the Chair.*

##### I. ELECTION OF OFFICE-BEARERS.

The following gentlemen were elected Office-Bearers for the ensuing session:—*President*, Professor Alexander R. Simpson; *Vice-Presidents*, Mr A. G. Miller, Dr Brakenridge, Dr P. H.



Maclaren; *Councillors*, Dr John Smith, Dr Strachan, Dr Alex. Bruce, Dr George Hunter, Dr David Menzies, Dr J. H. Balfour, Dr R. McKenzie Johnston, Dr R. H. Blaikie; *Treasurer*, Dr Francis Troup; *Secretaries*, Mr F. M. Caird, 21 Rutland Street, and Dr William Russell, 46 Albany Street; *Editor of Transactions*, Dr William Craig, 7 Bruntsfield Place.

## II. ELECTION OF ORDINARY MEMBERS.

The following gentlemen were elected Ordinary Members of the Society:—William Smith, L.R.C.P. & S. Ed., L.F.P.S. Glasgow; Robert A. Fleming, M.A., M.B., C.M. Ed.

## III. EXHIBITION OF PATIENTS.

1. *Mr A. G. Miller* showed—(1.) A young man who had suffered from THYROIDITIS—A. A., æt. 20. On the morning of July 24th patient noticed that his neck was swollen. The swelling was red, soft, and painless. Patient did not know of any cause. The swelling was similar in shape to the thyroid gland, and rose and fell with the trachea in deglutition. It extended up to the thyroid cartilage and down to the sternum. Ice was applied to the neck and kept on for three days, at the end of which period the swelling had almost disappeared. On the fifth day patient was discharged, with the thyroid only slightly enlarged. Temperature on admission was 99° F. It fell to subnormal whenever the ice was applied, and remained down. Patient when shown to the Society had still an enlargement of the thyroid. In fact, it was much the same as when the patient had been discharged from hospital nearly four months previously. Mr Miller could only explain the sudden appearance and rapid subsidence of the swelling on the supposition that there had been an inflammation of the gland, probably from exposure to cold. The condition was very rare. He had not met with a similar case before. (2.) PATIENT, under care of Dr James Young. Man, æt. about 50. Upwards of twenty years ago patient strained his neck when carrying a table on his head, his head being thrown forcibly backwards. Since that time the thyroid gland has been enlarged. It began to grow more rapidly during the last three years. During the last six months the tumour has grown very rapidly, and has interfered with breathing. The tumour occupies the whole of the right side of the neck anteriorly, and extends partly over to the left side also. It is soft mostly, and at some parts apparently fluctuating. The trachea is pressed over to the left side considerably. The glands of the neck are enlarged. Mr A. G. Miller, at the request of Dr Young, demonstrated the case to the Society. He considered the traumatic origin of the bronchocele as the most interesting feature of the case. The sudden increase of the tumour after so many years of slow growth, along with the other features of the case, showed that it was now malignant.

2. *Dr John Thomson* showed a little girl, aged 2 years, suffering from PEDICULOSIS OF THE EYELASHES. She had no pediculi of the head or body, and those on the lashes were pediculi pubes.

#### IV. EXHIBITION OF INSTRUMENT.

*Mr A. G. Miller* showed a HOLLOW-HANDLED VOLKMANN'S SPOON, recommended by Dr De Forest Willard of Philadelphia. It was an improvement on Mr Barker's instrument, inasmuch as it did not require any special arrangement for shutting off the flow of lotion. A syphon apparatus was attached to the handle, and the flow was easily stopped by the pressure of the hand in working the instrument. The flow of lotion into the hollow of the spoon kept it clear of detritus, and also washed out the deep parts of the wound thoroughly without the operator having to withdraw the spoon for that purpose.

#### V. EXHIBITION OF SPECIMENS.

1. *Dr Alexis Thomson* showed a specimen of OVERGROWTH OF THE SKULL FOLLOWING THE DISTRIBUTION OF THE FIFTH NERVE, a description of which will appear in a future number of this Journal.

2. *Dr Kenneth M. Douglas* showed a SPECIMEN which Dr P. H. Maclaren had removed on the preceding Friday by abdominal section—Dr Maclaren, owing to slight indisposition, being unfortunately unable to be present. The history of the case was briefly as follows:—The patient, a healthy labourer, aged 24, went to work as usual on Friday, October 24, and had a healthy action of the bowels before leaving home. Two hours later he began to experience "twisting" pains in the umbilical region, which became so bad that at 10.30 he had to go home. During the day the bowels acted more than once, and he vomited greenish semi-solid stuff. In the afternoon he was seen by a medical man, who ordered some "pill" and an injection. These acted fully, and on the next day two further injections were ordered. The vomiting and pain persisted despite all treatment, and on Wednesday, Oct. 29, he was advised to come to Hospital. So far as could be discovered, none of the stools contained blood, nor an excessive amount of mucus. On admission, the man was found to be collapsed and depressed; temperature, 97°. The abdomen was moderately distended, the intestinal coils being evident through the walls; there was no pain nor tenderness, no perceptible tumour, nor definite resistance, nor dulness on percussion. As the case did not appear to be one of absolute intestinal obstruction, small doses of calomel were ordered, and no food beyond iced milk; turpentine stupes were also applied. Next day, further careful examination disclosed no tenderness nor tumour; the abdominal walls were quite soft and relaxed. Since admission, the bowels had acted twice, and the stools were described as healthy. The treatment was altered, and the patient brought under the influence

of morphia. On the following day (October 31) the patient's state was changed. He was flushed and restless, the temperature was  $100^{\circ}\cdot4$ , and the pulse 144, respiration being only 11 per minute. The abdominal walls were tense and hard. After consultation with Mr Duncan, it was agreed to operate, peritonitis having obviously supervened. The abdomen was therefore opened in the middle line from the pubes to the umbilicus, and at once some clear fluid escaped. The lesser bowel was distended and of a dark red colour. After some search, which entailed considerable eventration, the mischief was discovered, and this piece of bowel upon the plate was drawn out of the wound. At first sight it appeared as if a fleshy band of the thickness of the little finger encircled the bowel, but this proved to be the upper limit of an intussusception, at or near the ileo-colic valve. The state of the gut necessitated its excision, and the operation was completed by stitching the two ends of the divided bowel in the skin wound. The patient died some four hours later. The outer tube of the intussusception had sloughed, so that at one point the mucous surface of the middle tube was exposed; one could also clearly see the bowel above the intussusception, the portion of cæcum resected, and the lower end of the intussusception passing into it.

#### VI. ORIGINAL COMMUNICATIONS.

1. *Professor Annandale* read his paper on WRY-NECK, ITS VARIETIES, AND THEIR TREATMENT, which it is hoped will appear in a future number of this Journal.

*Mr Caird* expressed his great pleasure at hearing a paper which gave the result of such extensive experience. He would like to ask Professor Annandale if, in the cases of continuous spasm of the sterno-mastoid, there had been any hypertrophy of the muscle or exaggerated curvature or change observed in the clavicle.

*Mr Cotterill* remarked that in criticising the two operations proposed for division of the spinal accessory nerve, he was strongly of opinion that the better operation was that which sought for the nerve by the upper incision, viz., one along the anterior border of the sterno-mastoid muscle, three inches in length, commencing at the apex of the mastoid process. The objections to the lower incision, as usually recommended, at the posterior border of the muscle, were:—(1.) That the position of the nerve was variable. (2.) That it might in this position be hard to distinguish it from other nerves, viz., the third cervical, small occipital, and great auricular. (3.) That when it was found it was then necessary to dissect it up some distance before the point at which it gave off its branches to the sterno-mastoid muscle were reached. Mr Cotterill, in referring to a successful case brought before the Society, pointed out that after section of the nerve the patient might have occasional relapses for some months; but that in his case there had now been for over a year no return of spasm, though the patient

had returned to his work as a compositor, which occupation had brought on the disease.

*Dr P. A. Young* rose to mention a remarkably rare cause of wry-neck which had recently come under his notice. A girl, aged 7 years, was brought to him with reference to the advisability of using massage for wry-neck. The arms were fixed to the sides on account of an osseous degeneration of the muscles passing from the trunk to the arms. The sterno-mastoid on the right side was much affected, causing wry-neck, and the muscle on the left side was beginning to be affected. This interesting and rare disease had been called by Münchmeyer, *Myositis ossificans multiplex progressiva*. Hensch with his large experience had only seen one case. He merely mentioned this case now, as it exemplified a rare cause of wry-neck, and hoped at a future meeting to bring the case more fully before the Society.

*Dr Symington* wished to know if Professor Annandale exposed the internal jugular vein in the course of the operation upon the spinal accessory nerve at the anterior border of the sterno-mastoid. He thought it well for surgeons to remember that the nerve sometimes passed behind the vein, instead of in front of it. He ventured to suggest the propriety of attempting to divide some of the upper spinal nerves in those cases in which several muscles of the neck were affected.

*Dr Burn Murdoch* thought that the thanks of the Society were due to Professor Annandale for having so clearly brought before it the result of treatment of spasmodic and non-spasmodic wry-neck. He related the case of a child who suffered from congenital non-spasmodic wry-neck, with marked secondary lateral curvature of the spine, where division of the sternal and clavicular attachments of the contracted sterno-mastoid was rapidly followed by the head becoming erect, and under gymnastic exercises the lateral curvature of the spine soon disappeared.

*Prof. Annandale* was always glad to have the criticisms of his anatomic colleagues. He was glad that Mr Symington approved of the incision along the anterior border of the sterno-mastoid. He agreed that there might be a difficulty in finding the nerve, but he suggested that if there was any difficulty the branches which passed to the sterno-mastoid might be traced upwards so as to reach the main trunk. He quite thought that in cases in which other cervical muscles were involved, a division of the nerves supplying them might be useful. He wished to emphasize a remark by Dr Cotterill, that the good result of division of the spinal accessory nerve was not always immediate, and this he attributed to the muscular irritability continuing for some little time. In answer to Dr Caird, he thought division of the nerve with separation of the ends sufficient, and also that he had not noticed alteration in the clavicle in spasmodic cases. He considered Dr Young's case a most interesting one. He had seen



ossification of certain muscles, but he had never seen this condition in the sterno-mastoid.

2. *Dr Allan Jamieson* read his paper entitled DERMATITIS HERPETIFORMIS, which will appear in a future number of this Journal.

*Prof. Annandale* wished to thank *Dr Jamieson* for his interesting paper. He did not profess to any special knowledge of skin diseases, but he expressed the hope that, although the disease so clearly described by *Dr Jamieson* was, at present, not very amenable to treatment, it might soon become so.

## OBSTETRICAL SOCIETY OF EDINBURGH.

### SESSION LII.—MEETING I.

*Wednesday, 12th November 1890.*—*Dr BERRY HART, President, in the Chair.*

I. *The President* showed (for *Dr William Smith* of Midcalder) the PLACENTA from a case of triplets. *Mrs J.* was confined on the 29th ult. The labour was easy and rapid. The three children were born at 11.45 A.M., and were all alive. One died in three-quarters of an hour, one at 6 P.M., and the third on the following day. It will be noted that there are two placentaë, one double and one single.

II. *The President* gave the INTRODUCTORY ADDRESS, which appears at page 554 of this Journal.

*Professor Simpson* thought the Society owed its thanks to the President for the interesting address with which he had inaugurated the session. It was a tempting subject that had offered itself to present a critique of the work of *Dr Matthews Duncan*, whose loss they all deplored. *Dr Hart* had not said one word too strong in the appreciation he had expressed of the personal worth and the professional work of one of the most distinguished of our Fellows, and the brief but graceful record of *Duncan's* work would serve to stimulate them all to follow his example, and do their best for the advancement of Obstetrics.

III. *Dr Barbour* gave his DEMONSTRATION OF SECTIONS AND CASTS from the Second Stage of Labour.

*Dr J. C. Webster* said that he did not believe *Dr Barbour* was warranted in concluding, from the examination of these casts and sections, that there was no increased flexion during the entrance of the child into the pelvis. *Dr Barbour* drew his conclusions from a comparison of the foetus *in utero* before labour with the foetus in the genital tract at a late period in the second stage. In the former the attitude is one of flexion, and in the latter one of partial extension, the occiput beginning to pass forwards under the symphysis. Now, between these two conditions there is a large gap to be considered, viz., the first stage and the early part

of the second stage. The specimens referred to by Dr Barbour tell nothing whatever about the attitude of the child during this long period. According to the orthodox description of the mechanism of labour, *flexion is most marked while the head is entering the brim*. The specimens demonstrated by Dr Barbour, therefore, prove nothing whatever regarding this period of labour, but only give information concerning the conditions before the beginning of labour and in an advanced stage of labour. Neither do the second-stage cases of Braune and Chiari throw light on this point. They are both too far advanced. In Schroeder's first-stage case the attitude is still one of flexion, but in order to tell the exact amount of flexion, or to make a proper comparison with the cases demonstrated by Dr Barbour, it would be necessary to compare *the fetuses or casts* of them together. While considering it highly probable that there is no increase of "flexion" after the commencement of labour, he did not think that this could at all be proved from the sections and casts now possessed by us. We need more cases.

*Professor Simpson* admired the demonstration which had been given by Dr Barbour, but agreed with Dr Webster in thinking that it would not be fair to conclude from the absence of head-flexion in Dr Barbour's preparation that there had been no flexion at a previous part of the labour. Even if there had never been any flexion in this particular case, we must not conclude that flexion did not occur in other instances. Where the pelvis was roomy and the soft canals relaxed there was no cause for flexion. As to the thinning of the posterior wall of the lower part of the uterus and of the vagina, perhaps the position in which the preparation was placed during the freezing process might have some effect, because if it had lain with the sacrum lowest the thin structures were just those which would be likeliest to be compressed between the foetus and the spinal column.

*Dr Milne Murray* said that the Society was specially privileged in having these beautiful drawings and casts brought before it, because, clear and interesting as the description given of the specimens elsewhere was, there could be no doubt that a special interest and value belonged to the demonstration given by Dr Barbour. With reference to the thinning of the posterior vaginal wall, which was so obvious, it had occurred to him, in looking at the drawing, that it might be partly explained by the fact that during the contraction the foetal head was pushed firmly against the pubis, thus fixing the anterior vaginal wall, and preventing its being drawn upon to the same extent as the posterior. This latter was free to slide between the head and sacrum, and hence was liable to the thinning which had so obviously occurred. He was also much interested in noticing that the occipital bone was driven under the parietals to some extent, while the frontal retained its normal position.

*The President* considered this special communication by Dr

Barbour the most valuable single contribution to the mechanism of labour he knew. In regard to the bearing of the casts on flexion, he considered the terms flexion and extension to be obsolete now. The method of taking casts which had proved so valuable in this instance had occurred to him some years ago, and he had attempted it clinically, but with little success as yet. He had also considered the question of the elongation of the posterior vaginal wall in a paper on Vaginal Rupture (*Edin. Med. Jour.*, July 1883).

IV. *Dr J. W. Ballantyne* read his paper on MATERNAL IMPRESSIONS, which will appear in a future number of this Journal.

*Dr Craig* remarked that the Society was greatly indebted to Dr Ballantyne for bringing this very interesting subject before the Society, and it would cause the members to examine more fully the facts bearing on this important question. He mentioned that he knew of a case in which a child born with only one foot was believed to be due to the fact that there was an oil-painting in the dining-room, on which was the portrait of a child in which one foot was not shown in the picture.

*Dr Playfair* said that with Dr Craig he thought the Society was greatly indebted to Dr Ballantyne for bringing this, it might be old-fashioned, but extremely interesting subject of maternal impressions before them. Most of them, however sceptical regarding this subject, must have had in their practice some experiences of these so-called maternal impressions, which, to say the least, they could not but look upon as very curious, and difficult to explain on any other theory, except on that of some influence transmitted through the mother. If they admitted the influence of heredity, there should not, he thought, be so much difficulty in allowing the influence of a profound impression on the mother having a well-marked effect on the foetus. Many of the conditions of heredity, as pointed out by Dr Ballantyne, could not be explained, and yet heredity was admittedly a genuine factor in the moulding of racial and individual peculiarities. They should not therefore, he thought, cast aside as unworthy of belief instances of impressions on the mother during pregnancy being transmitted in some shape or form to the foetus. Cases of the kind would occur to them all. He recalled one which happened only last July. It was one of the sudden effects of impressions alluded to by Dr Ballantyne. A lady, very near the end of her pregnancy, was sitting out of doors, when a little girl playing near, fell, or was knocked over, and severely cut two of her fingers. The lady rushed to her help, and did her best to soothe her and bind up her injured fingers. There was no one else near to render assistance, and the lady was left alone to do what she could for the injured child. A kind-hearted, sensitive, highly nervous woman, she was much impressed and agitated by the whole circumstances. As soon as she could she made her way home, and had barely reached there when she was taken in labour, and delivered of a dead child. She affirmed that the

child was moving vigorously, at least up till a few hours before the scene of the accident to the girl, and she believed herself that the fright and distress which that gave rise to caused the death of her child. The child was to all appearance full time, and perfectly nourished and healthy looking, and no cause whatever, other than that assigned by the mother, could be discovered for its death.

*The President* had listened with interest to Dr Ballantyne's paper. The subject was an obscure one, and it was exceedingly difficult to get accurate facts from the parents. They would support any view as to the cause of deformity in children but the hereditary one.

*Dr Ballantyne* thanked the President and the Society for the attentive hearing given to his paper. He had expected criticism; indeed, it was partly with the purpose of evoking criticism that the paper had been written, and he was pleased to find that the Fellows had discussed the contribution in a critical spirit. He had not anticipated that all the facts alleged in behalf of the theory of maternal emotions would be believed; he was not able to accept them all himself, but he had thought that the subject ought to be brought up for discussion in the Society, especially as it had of late been considered in kindred societies. Dr Ballantyne was at present writing to medical men in different parts of the world with a view of ascertaining whether the belief in maternal impressions was as widespread as had been supposed, and it was scarcely necessary for him to say that he would be most happy to receive records of cases observed by any of the Fellows.

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#### GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

THE first meeting of the season was held in the Faculty Hall, 242 St Vincent Street, on Wednesday evening, Oct. 22nd, Dr M. Cameron, President, in the chair. After the Treasurer's and Secretary's reports, the President gave his Retiring Address, and the following Office-Bearers were elected:—*Honorary President*, Lawson Tait, F.R.C.S.; *President*, Robt. Park, M.D.; *Vice-Presidents*, G. Halket, M.D., and D. Tindal, M.D.; *Treasurer*, Robt. Pollok, M.B.; *Secretary*, G. A. Turner, M.D.; *Reporting Secretary*, Robt. Jardine, M.D.; *Pathologist*, J. Nigel Stark, M.B.; *Members of Council*, A. Scott, M.D.; T. F. Gilmour, L.R.C.P.E.; Thos. Richmond, L.R.C.P.E.; A. Miller, L.R.C.P.; R. Kirk, M.D.; H. St Clair Gray, M.D.

*Dr Stewart Nairne* showed a CANCEROUS UTERUS which he had removed by abdominal section ten days before, in the Samaritan Hospital. The patient was reported to be doing well.

*Dr Robt. Jardine's* paper on PUERPERAL ECLAMPSIA was held over for the next meeting of the Society.

The *Honorary President* has intimated his willingness to deliver an address towards the close of the session.



## Part South.

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### PERISCOPE.

#### MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Surgeons' Hall, etc., etc.

**STROPHANTHUS IN CHILDHOOD.**—Dr Moncorvo of Rio Janeiro, formulates the following conclusions as the result of numerous observations on the use of strophanthus in children. (1.) Strophanthus is a valuable acquisition as a cardiac and diuretic remedy in the diseases of childhood, both on account of its promptness and energy of action and of its complete harmlessness to children of a very tender age. (2.) Administered in the form of Fraser's alcoholic tincture, in cases of tricuspid and mitral lesions, with diminished urinary secretion, strophanthus promotes the re-establishment of the tonicity of the heart, regulates the rhythm of its beats, and increases the amplitude and strength of the pulse. Its diuretic power is well marked. (3.) It renders excellent service as a cardiac tonic in cases of pulmonary and broncho-pulmonary affections of childhood, so often complicated with cardiac insufficiency. (4.) The happy results of its employment last long after cessation of its administration (*Journal of Amer. Med. Assoc.*)—*The Practitioner*, October 1890.

**SALOL IN CHOLERA.**—During the year 1889 six hundred and twelve cases of cholera occurred in the suburbs of Hyderabad, eighty-eight of which came under the treatment of Dr Patrick Hehir. Of these, seventy-seven took place up to the end of August, and eleven after that date. In the former set of cases the perchloride of mercury treatment was adopted, with thirty-nine deaths,—a mortality of 44·7 per cent.,—or much the same as that anticipated from any system of expectant treatment. Happening to come across in July, Professor Löwenthal's investigations in connexion with the germicidal properties of salol on the comma bacillus of Koch in the presence of pancreatic juice, as cholera was prevalent at the time, Dr Hehir determined to put his suggestions to practical test, and he reports his results in the *Indian Medical Gazette*, No. 5, 1890. On the 1st of August all cases admitted into the Cholera Hospital were treated with it, 10 grains were given to each patient every two hours, with 15 minims of spirit of chloroform; the maximum quantity given to any one case was 90 grains, and the minimum 40 grains. Every case so treated recovered. The drug did not appear to produce any immediate influence, all the urgent symptoms gradually abating. Two effects, however, are stated to have been manifest, a shortening of the

period of convalescence, and an absence of symptoms of uræmia. The general effect appeared to be to prevent transudation into the alimentary canal; in fact, after a few doses the patients drank with avidity, and began to retain all the nourishing fluids administered to them. Under the influence of this increased quantity of liquid in the circulation the heart's action gained in vigor, the pulse returned, the temperature rose, the cyanosed aspect and shrunken features disappeared, and reaction was accelerated. Dr Hehir admits that as his cases were in the final stages of the epidemic, and as it is a well-recognised fact that the last cases of an expiring epidemic are of less severity, it is also to be expected that the mortality would be lower than if the cases had occurred in the early stage of the outbreak, or when it was at its acme. That salol is not a specific for cholera, which Dr Hehir's results would seem to indicate, is proved by the further report, in the same number of the *Indian Medical Gazette*, of four other cases of cholera treated by salol, in all of which death took place.—*Therapeutic Gazette*, October 1890.

X THALLIN IN TYPHOID FEVER.—Dr F. Schmidt, in his graduation thesis at Berne in 1889, reports the results which he obtained in the employment of thallin in twenty-two cases of typhoid fever, the remedy being given in doses varying from  $\frac{3}{4}$  to 3 grains in a day, with nothing given at night. The following are his conclusions (*Les Nouveaux Remèdes*, July 24, 1890). 1. The mortality of typhoid fever treated by thallin is less than that obtainable by any other mode of treatment. 2. Thallin, in the doses above mentioned, distinctly reduces the temperature in cases of moderate intensity, but in typhoid fever of extreme gravity this dose is insufficient; it also would seem that the patients support thallin better than cold baths. 3. In general the duration of the disease is not diminished, although this effect would appear to occur in a few isolated cases. 4. No unfavourable secondary action was noted either on the heart or lungs; there was no collapse or irritation of the kidneys; nevertheless, basing his conclusions on the results obtained by other authors, Schmidt advises the withholding of thallin in all cases where renal lesions have been detected. 5. Thallin maintains a favourable influence on the sensorium in all cases of typhoid fever except those of extreme gravity. 6. Complications and relapses are not prevented by the use of thallin any more than by any other form of treatment. 7. If it is impossible to discover any specific action of thallin on typhoid fever, at least it would appear that certain effects exist which render this action probable. Finally, the author considers the treatment by thallin in the majority of cases as in no respect inferior to that of cold baths, and in cases where there is a rapid progress of the disease would even seem superior. After having analyzed the thesis of Schmidt, Butimeyer adds that he has never

observed collapse even after doses considered excessive, even more than  $7\frac{1}{2}$  grains being given. In this amount thallin appears to clear the brain in severe as well as in the milder forms of typhoid fever.—(*Therapeutic Gazette*, September 1890.) \* *Edin. Med. Journ.*

ICHTHYOL IN DISEASES OF WOMEN.—According to the Berlin correspondent of the *Medical Press and Circular* for July 23, 1890, Dr H. W. Freund of Strasburg recommends ichthyol as useful, both externally and internally, in a number of the sexual diseases of women, especially those of inflammatory origin. In his hands it has proved more efficacious and more rapid in its action than any other remedy. It has also the useful effect of quickly relieving the pain that accompanies pelvic inflammations. In chronic parametritis, chronic and subacute perimetritis, in inflammation of the tubes and ovaries, in erosions of the os, and in pruritus of the external genitals, it is capable of bringing about a quite surprisingly rapid and complete cure. Internally, he gives the ichthyol in doses of 1 gramme, or a grain and a half in pill three times a day to commence with, and later in doubled doses. Externally, he employs a mixture of ichthyol 5 parts, and glycerine 100 parts, on tampons of cotton introduced into the vagina. When energetic resorption is demanded, he employs the ichthyol with equal parts of lanolin, or with green soap, 8 parts of ichthyol and 80 of soft soap rubbed over the abdominal walls. He also uses it in the form of suppository, 5 to 2 grammes. In the case of erosions, he has painted the pure sulpho-ichthyolate of ammonia on the os and cervix, and has observed very rapid healing. In pruritus he uses it in the form of the ointment (ichthyol 10 parts, lanolin 90 parts, is a very good form), or a ten per cent. aqueous solution. The digestion improves under its use. The results of its intra-vaginal application are, according to Dr Freund, positively astounding. Thick cicatrices in the vagina disappeared in the course of a few days, parametric cicatrices thinned down and became less rigid, tubal pains diminished, etc. The pain-relieving quality of the ichthyol was quite as remarkable as its very unusual one of promoting absorption. No ill effects were ever observed. The author acknowledges, however, that there are cases where ichthyol alone does not suffice to bring about the desired result, but other methods of treatment must be put into use in its support. Thus, when the pain is very great, and the case permits, he uses tampons which contain from two to five per cent. of chloral hydrate in the glycerine employed, and goes on to the ichthyol after the pain has subsided. And again, after resorption has taken place, he leaves off the ichthyol and passes on to massage or electricity. Very obstinate, and even desperate cases should not be submitted to operation until a trial has been given to ichthyol.—(*Therapeutic Gazette*, September 1890.

CHLORIDE OF METHYL AS A LOCAL ANÆSTHETIC.—In 1884,

Debone first used chloride of methyl in sciatica with brilliant results. Later, Vinay, Baily, Tenneson, and Begue employed it as a local anæsthetic in various forms of neuralgia, rheumatic muscular pains, traumatic periostitis, and pains in the joints, while Vidal, Labbe, St Germain, Pollaillon, Cazin, and Perier have employed it as a local anæsthetic in a large number of minor surgical operations with satisfactory results.

Professor Kusmin of Moscow (*Centralblatt für Chirurgie*, No. 31, 1890) has recently taken up still further the applicability of chloride of methyl in operations, and concludes from his numerous experiments made on dogs, in which he was not only able to anæsthetize the skin, but also the deeper tissues, in the amputation of the leg of a dog; that it was possible by its means to produce anæsthesia, which will last from one and a half to two seconds, a time which is quite sufficient for opening abscesses. As the anæsthesia of one and a half to two seconds may be repeated a number of times during the same operation without damage to the tissues, and as not only the skin, but also the muscles and even the bones, may be made insensible by its employment, chloride of methyl has the great advantage, especially over ether, in that it more readily produces anæsthesia and does not burn, and may even be administered where the thermo-cautery is employed, and is even capable of producing sufficient anæsthesia to enable major operations, such as amputation, to be performed.

Dr Kusmin uses Vincent's apparatus, and directs the stream directly on the part which is to be anæsthetized, or first covers the part which it is desired to render insensible with a little cotton wool first moistened with chloride of methyl. In the latter case the anæsthesia is slower, not being produced so soon, and not being complete before five minutes. In addition to opening a large number of abscesses, Dr Kusmin employed the chloride of methyl in his clinic for the following operations:—Four cases of phymosis, two cases of strangulated hernia, two cases of atresia, two for cancer of the lip, one for the removal of a dermoid cyst as large as the fist from the head, and one in which glands were excised from the neck. The results were all satisfactory.—*Therapeutic Gazette*, October 1890.

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## SURGICAL PERISCOPE.

By A. G. MILLER, F.R.C.S.E.

DISLOCATION OF THE SHOULDER WITHOUT RUPTURE OF THE CAPSULE (reported by D'Arcy Power, M.B., St Bartholomew's Hospital).—Patient, æt. 69, died twelve days after injury, of broncho-pneumonia. Dislocation had been reduced. "At the autopsy the head of the humerus was in its proper position, and the capsule of the joint was quite intact. It was rather lax, and its attachment to the anterior border of the glenoid cavity was slightly



raised, but still quite continuous with the periosteum. The coracoid process was torn off the scapula, but still remained attached to the short tendon of the biceps; and the muscles surrounding the joint were intact, with the exception of the sub-scapularis, which was lacerated, and into which there had been some extravasation of blood. On opening the capsule, the joint was seen to be blood-stained, and on protruding the head of the bone there was visible on the posterior part of the articular surface a groove, which on redislocation fitted the lower part of the anterior margin of the glenoid cavity. The groove was about three-quarters of an inch long, and implicated the cartilage on the margin of the anatomical neck. The capsular ligament showed signs of injury where the head of the bone had impinged against it at the moment of dislocation, and there was a small piece of the articular cartilage lying loose in the joint."—*Trans. Path. Soc. of London*, 1889.

OPERATIVE TREATMENT OF TALIPES CALCANEUS PARALYTICUS (by V. P. Gibney, M.D., of New York).—Dr Gibney, after a long trial of galvanism and massage, which did no good, has operated on twenty-eight cases, in which he removed a portion of the tendo-Achillis with a good result in seventeen, a fair result in eight, and a poor result in three cases. "By 'good' is understood ability to walk with the foot squarely upon the floor, not striking the heel first, and to walk without the aid of apparatus. By 'fair' is understood ability to walk, but the tendon has stretched a little, and an anterior support is required to keep the foot in good position." "Judging, then, from these results, it seems to me we can safely predicate a good result in a large number of cases operated upon."—*Annals of Surgery*, April 1890.

SUCCESSFUL OPERATION FOR THROMBOSIS OF LATERAL SINUS CONNECTED WITH CHRONIC EAR DISEASE.—Mr Ballance read before the Medical Society of London, on 31st March last, notes of four cases in which he had operated, in two of which recovery took place. "The first case was that of a man, aged 21, who was exhibited to the Society. He had had a history of discharge from the ear for fifteen years, which had been much less just previously to the present illness. Before admission there had been headache, vomiting, and several attacks of shivering. When taken into the hospital he was sleepy and flushed; he vomited, complained of intense headache, and had pain at the back of the neck. There was pus in the external auditory meatus, with a temperature of  $104^{\circ}$ . Three days after admission the tympanum was curetted, and some thick offensive pus removed. Next day he was no better, and as œdema over the mastoid had developed, together with tenderness over the jugular vein, it was decided to open the mastoid at once. The bone was found green and offensive; half a drachm of pus came from the groove of the lateral sinus, and pus was also found on the posterior surface of the petrous bone. Dis-

eased bone having as far as possible been removed, the sinus was opened longitudinally and syringed out; it contained offensive clot. The jugular vein was tied in the neck and divided between two ligatures. The patient was better after the operation, but six days later blood-stained sputum was expectorated, and signs of a pyæmic infarct of the lung were detected. This was followed by swelling of the joints, the formation of a large abscess over the buttock, and a smaller one in the neck above the ligatured vein. The lateral sinus, so far back as the torcular Herophili, came away as a slough. The patient left the hospital well seventy-four days after the operation. . . . In the fourth case there was also a two years' discharge from the left ear, and the patient, a woman, was seized after exposure to cold with vomiting, pain in the head, and high fever. There were pain and tenderness over the mastoid, with slight swelling of the discs. An operation like that performed in the other cases was done in this also, the internal jugular vein being ligatured, and offensive clot removed from the sinus. The operation was performed three weeks ago, and the patient was rapidly convalescing."—*Lancet*, 12th April 1890.

WHAT PRODUCES ANCHYLOSIS OF JOINTS?—Dr A. M. Phelps of New York has made a number of experiments "to determine the question of whether prolonged fixation of a joint would result in ankylosis of it." The conclusions at which he arrives from these experiments are:—"1. That a normal joint will not become ankylosed by simply immobilizing it for five months. 2. That motion is not necessary to preserve the normal histological character of a joint. 3. That when a healthy joint becomes ankylosed or its normal histological character changed, it is not due to prolonged rest, but to pathological causes. 4. That immobilizing a joint in such a manner as to produce and continue intra-articular pressure will result in destruction of the head of the bone and the socket against which it presses (as was evidenced in one of his experiments). 5. That atrophy of the muscles of the limb will follow prolonged immobilization of a joint. If these experiments prove that prolonged fixation will not produce ankylosis of a normal joint, that motion is not essential for the preservation of its normal function, then the causes of ankylosis must depend upon pathological conditions and not upon prolonged fixation. The question of ankylosis is determined by the severity of the inflammation, the character of the inflammation, the duration of the inflammation, the presence of intra-articular pressure, the subsequent cicatricial contraction of soft parts around the joints, the tissues involved, and the amount of destruction of bone and cartilage. Motion of an inflamed joint only interferes with repair, and more certainly hastens the case on to ankylosis and deformity. To prevent this calamity, when it is possible, absolute rest and the relief of intra-articular pressure should be the plan of treatment. Inflamed

joints treated upon the plan of absolute immobilization and the relief of intra-articular pressure furnish by far fewer cases of ankylosis, limited motion, and deformity."—*New York Med. Journal*, 17th May 1890.

X EXTIRPATION OF THE VESICULÆ SEMINALES FOR TUBERCULOSIS (by Dr E. Ullmann of Vienna).—"The prostate was exposed by a semicircular incision in the perineum, midway between the anus and scrotum, according to the method recommended by Prof. Zuckerkandl. After dissecting away the rectum, a sound was introduced into the bladder, so as to cause protrusion of its posterior wall, and in this manner the seminal vesicles and vasa deferentia were brought distinctly into view. Both organs were found to be markedly infiltrated, the right being the seat of a caseous degeneration. After a careful dissection the seminal vesicles were removed together with the right vas deferens, and a portion of the upper surface of the prostate which was the seat of a small abscess. Notwithstanding a severe secondary hæmorrhage, which necessitated a reopening of the wound and tamponing with iodoform gauze, the patient made a rapid and excellent recovery, and his health, which before the operation had been much impaired, was completely restored. The author thinks that the obscure symptoms of tuberculosis of the seminal vesicles are responsible for the fact that the operation has not been previously attempted. He regards himself justified in recommending it in cases of primary tuberculous orchitis, or epididymitis, in which one or both seminal vesicles are affected, and also in primary tuberculosis of the seminal vesicles. He does not consider the resulting impotence as a contra-indication to the operation, since it is a well-known fact that patients suffering from tuberculosis of the seminal vesicles always lose their sexual power within a short time; and indeed this impotence may be regarded as one of the chief symptoms which characterize the disease."—*International Journal of Surgery*, May 1890. X *Edin. med. Jour.*

THE SURGICAL TREATMENT OF TUMOURS OF THE BLADDER.—"1. Only after operation is there much chance of recovery from any kind of vesical tumour. 2. Operation should be done in all except the least and most severe cases. 3. As a rule, in males, the bladder should be opened above the pubes. 4. The removal should be as complete as the situation and extent of the growth will permit." Much aid is afforded, in examination of the bladder, by the introduction of two fingers into the rectum. By this means the *bas-fond* can be made more accessible to examination from above.—Dr P. S. Conner of Cincinnati, *Medical News*, May 24, 1890.

REDUCTION OF A DISLOCATION OF THE HIP-JOINT AFTER FOUR MONTHS' DURATION, by W. Alex. Mackay, M.D., F.R.C.S. Edin.—"Ramon D., aged 33, while working in a mine on May

13th, 1889, had his right thigh dislocated. A large quantity of earth and a mass of rock slid down and nearly buried him. The rock had to be broken up before it could be removed from his leg. I saw the patient for the first time on Sept. 22nd, four months and nine days after his accident. He told me that several ineffectual attempts at reduction had been made. The position of the limb was in every respect characteristic of dislocation on to the dorsum ilii. The head of the bone could be distinctly felt through the atrophied muscles. There was slight cedema of the leg below the knee. Placing the patient under an anæsthetic, I attempted reduction by the usual manipulation, but failed in the first attempt. I then flexed the leg again, abducted very forcibly till it seemed as if the head of the bone was almost about to pass on to the pubis. Rotation outward and steady extension now produced a crunching sensation, and the head of the femur passed into the acetabulum. He was kept in bed for a fortnight with a long splint applied. I saw him several months later, and he was walking well and gaining strength in his atrophied muscles.”—*Lancet*, June 7, 1890.

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## Part Fifth.

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### MEDICAL NEWS.

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ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At the Annual Meeting of the College on 15th October, the following resolution was unanimously adopted:—“That the Royal College of Surgeons of Edinburgh having instituted an examination for a Diploma in Public Health, and its attention having been thus specially directed to the requirements of the Sanitary Service, the College feels the importance of securing the satisfactory working of the various Sanitary Acts, including the compulsory notification of infectious diseases, and begs to represent to the Board of Supervision the necessity of relieving all superintending County Health Medical Officers from private practice, so that they may be enabled to discharge their important duties without friction in their relations to the rest of the medical profession.”

ROYAL COLLEGES GOLF CLUB.—The Royal Colleges Golf Club, which was inaugurated after the match played on 26th March between teams of the Royal Colleges of Physicians and Surgeons, has now a membership of 94. A trophy, in the shape of a large silver “Loving Cup,” of Old German design, has been made to the order of the Club by Messrs Marshall & Sons, George Street. It



will remain in the custody of the Royal College of Surgeons, whose team proved victorious in March, till the next spring meeting of the Club. On 25th October the autumn meeting of the Club was held at St Andrews. The prizes competed for were:—1st, A very handsome medal for the best scratch score, presented by the Captain, Dr Argyll Robertson, F.R.C.S.E.; 2nd, A silver-mounted flask, for the best handicap score, presented by Dr John Duncan, P.R.C.S.E. The winners were:—Scratch medal, Dr David Wallace, F.R.C.S.E., with score of 96. Handicap prize, Dr David Wallace, 96, less 6=90; Dr Hodsdon, 112, less 22=90. This tie was played off on 8th November over Luffness Links, when Dr Hodsdon won the flask.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about 180 dollars, will be made on July 14, 1891. Essays intended for competition may be upon any subject in Medicine, and must be received by the Secretary of the College on or before May 1, 1891.

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#### NATIONAL LEPROSY FUND.

A LEPROSY COMMISSION TO INDIA.—The National Leprosy Fund, of which His Royal Highness the Prince of Wales is President, is making rapid and important strides towards the fulfilment of the scheme of its Executive Committee, under the chairmanship of Baron Ferdinand de Rothschild, M.P.

A memorial cross to the late Father Damien, which has been designed by Mr Edward Clifford, is nearly completed, and is shortly to be despatched for erection at Molokai on the site selected by the King of Hawaii, the Hawaiian Chargé d'Affaires, and the Hon. S. M. Damon.

The first number of the *Journal of the Leprosy Investigation Committee*, edited by Dr Phineas Abraham, Technical Secretary (copies of which may be obtained from Messrs MacMillan & Co., the publishers), has been issued. The Journal contains papers of great interest by the ex-President of the College of Surgeons (Mr Jonathan Hutchinson, LL.D., F.R.S.); Dr J. F. Payne; Professor D. D. Cunningham, and several eminent scientific men. The second number is now in preparation, and is expected to contain contributions of considerable importance.

But perhaps the most important project yet undertaken by the Committee of the Fund is the despatch of a Leprosy Commission to India. The Commissioners, who have been individually appointed by the Royal College of Physicians, the Royal College

of Surgeons, and the Committee of the Fund, are respectively as follows:—Beaven Neave Rake, Esq., M.D., Government Medical Officer and Medical Superintendent of the Trinidad Leper Asylum; Alfredo A. Kanthack, Esq., M.B., B.Sc., F.R.C.S., late Midwifery Assistant, St Bartholomew's Hospital, London; and George Alfred Buckmaster, Esq., M.D., formerly Radcliffe Fellow, Magdalene College, Oxford. The Commissioners on their arrival in India will be joined by Surgeon-Major A. Barclay, Secretary to the Surgeon-General to the Government of India, and Surgeon-Major S. J. Thompson, Deputy Sanitary Commissioner of the Second Circle in the North-West Provinces and Oudh, who have been deputed by the Viceroy of India to be associated, and to work with the British Commissioners in India.

The Committee of the Fund have been very much indebted to the Royal College of Physicians and to the Royal College of Surgeons for the valuable aid rendered by these bodies, who have not only nominated one Commissioner each, but have each deputed two of their Fellows to act on a special Committee to prepare instructions for the Leprosy Commissioners. This Committee, consisting of Mr Jonathan Hutchinson, ex-Pres. R.C.S. (Chairman); Sir Dyce Duckworth, M.D., F.R.C.P.; G. A. Heron, Esq., M.D., F.R.C.P.; Charles MacNamara, Esq., F.R.C.S.; the Hon. G. Curzon, M.P., and Mr Edward Clifford (the last two gentlemen and Mr Hutchinson being members of the Executive Committee), with Mr Claude Johnson acting as Secretary in the absence of Sir Somers Vine, have been engaged for some time in considering the course which might most usefully be pursued in India by the Commissioners. The College of Physicians also rendered valuable assistance by giving the Committee the advantage of the conclusions arrived at by a Committee appointed by them some time back to consider the question of a Leprosy Commission. The Commissioners after a stay of about one year in India will, within six months of their return to England, send to the Committee a full and detailed report of the work of the Commission, which will state the conclusions they have arrived at, and the grounds for those conclusions, concerning the desirability or otherwise of, firstly, encouraging the voluntary partial withdrawal of lepers from amongst the non-leprous population; secondly, of enforcing the complete isolation of all lepers; and, thirdly, of enforcing the isolation of certain lepers. The Commissioners in their final report will also describe minutely what they believe to be the best plans for insuring the efficient carrying out in practice of their recommendations relating to the treatment of lepers.

This action will not complete the programme of the National Leprosy Fund, for the Committee have further important measures to fulfil so soon as they may receive funds sufficient for the purpose. Amongst these is the endowment of two studentships,—one student to make the United Kingdom and the remainder of Europe his

field of investigation, and the other to go abroad and study the disease in China, the Colonies, and elsewhere. The studentships are to be held for a period of three years, and to be renewed if thought desirable.

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### AN ITALIAN OBSERVER OF OUR EDINBURGH MEDICAL SCHOOL.

DR HECTOR MOROTTI has been contributing to the *Gazzetta degli Ospitali* a series of surgical letters from England and Scotland. In the eighteenth of these letters he commences his observations upon the medical schools and hospitals of the northern land. The letter is dated Edinburgh, 24th October 1890.

A few days before leaving London, Dr Morotti ingenuously tells us that he communicated his desire to visit Edinburgh and Glasgow, and make himself acquainted with two of the most renowned schools of the modern era. On making this announcement he received great and cordial encouragement from the London surgeons. "I leave it to be imagined," Dr Morotti tells us, "what was my trepidation in touching that soil and visiting places so celebrated. My expectations were not deceived. The two principal cities of Scotland possess two truly splendid Universities which are at the height of their fame, not only for the majesty and grandeur of their construction, but for the riches of their traditions, the excellence of their schools, and their increasing prosperity." He envies for his country a city like Edinburgh—a seat of learning in a town not too large so as to be suffocated under other employments, nor too small so that the students feel themselves out of the world. The most distinguished German universities, he observes, are generally in small towns; and the most illustrious Italian University, Pavia, is also a small place. Dr Morotti then describes the different Schools of Medicine in Edinburgh and Glasgow, the Universities, and the Colleges of Physicians and Surgeons. In the Royal Infirmary of Edinburgh the Extra-mural and Intra-mural teachers meet; all live under the same roof, and expend their activity with admirable harmony. This seems like a dream, an arrangement which has too much of poetry in it. This brotherly harmony is what he has admired, and what he wishes to make others admire. After a short description of the different clinics, Dr Morotti comes to details. The Royal Infirmary possesses a solemn, imposing, somewhat grim aspect: there is an entire absence of useless and frivolous ornaments. The dark gray colour of the stone renders it dismal enough under the pallid and cloudy sky which is too often found in Scotland. The building itself is in the pavilion style, like some of the newest hospitals in London, Paris, and Germany. He considers the Royal Infirmary one of the best hospitals in the United Kingdom.

Amongst the glorious traditions of the Medical School he

enumerates the names of Alexander Monro, Sir Charles Bell, James Spence, Matthews Duncan, and Lister.

Dr Morotti is much pleased with the lectures of Professor Chiene, "a name illustrious in Scotland, and well enough known also in Italy." He generally lectures from ten till eleven, and has the most numerous audience in the Faculty of Medicine—about 450 students. Dr Morotti compares the discourse of the Edinburgh Professor to a fresh fountain rising from the hollow of a rock. Chiene feels the poetry of science through the classical reminiscences of great authors, his conceptions are always elevated, his reasoning clear, succinct, and accessible to the minds of the young men. He began his course with the Principles of General Pathology, and Dr Morotti praises his skill in enlivening the dryness of the subject with coloured designs and fresh and preserved preparations. He promises in his next letter to describe the facilities afforded for the study of Surgical Pathology and of Bacteriology.



#### NOTHING NEW UNDER THE SUN.

IT is curious to find that something like the present-day theories of a struggle between the microbes and leucocytes must have been in vogue more than a century ago, otherwise this bit of satirical burlesque could scarcely have been written and played.

*Persons*—The Devil as Hellebore, President of the College ;  
Dr Last, a new Licentiate ; other Doctors and Pupils.

*Hel.* . . . Proceed we now to the lecture ! Brethren and students, I am going to open to you some notable discoveries that I have made respecting the source or primary cause of all distempers incidental to the human machine. And these, brethren, I attribute to certain animalculæ of piscatory entities, that insinuate themselves through the pores into the blood, and in that fluid sport, toss, and tumble about, like mackerel or cod-fish in the great deep. And to convince you that this is not a mere *gratis dictum*, an hypothesis only, I will give you demonstrative proof. Bring hither the microscope !

*Enter a SERVANT with a microscope.*

Doctor Last, regard this receiver. Take a peep.

*Last.*—Where ?

*Hel.*—There. Those two yellow drops there were drawn from a subject afflicted with the jaundice.—Well, what d'ye see ?

*Last.*—Some little creatures like yellow flies, that are hopping and skipping about.

*Hel.*—Right. Those yellow flies give the tinge to the skin, and undoubtedly cause the disease. And now for the cure ! I





in its pages, and the method of recording visits made and to be made is excellent in its simplicity.

**LONGEVITY.**—In connexion with the pseudo-centenarianism of the Elgin "Methuselah," whose death was recently recorded (*Pall Mall Gazette*, Aug. 26th), the following story will be read with interest:—It is well known that people seldom die in Ochiltree. When any one there gets tired of life, he generally finds it necessary to remove to another parish. Many of the inhabitants, however, do not seem ever to tire of life, and so remain on their native soil till their ages are past all reckoning. Colonel Andrew M'Dowall, when he returned from India, came one day upon an old man sitting weeping on a big stone by the roadside. When he came up, the old man rose and took off his bonnet and wiped his eyes, and said, "Ye're welcome hame again, laird." "Thank you," said the Colonel, adding, after a pause, "I should scarcely know your face; aren't you Nathan M'Culloch?" "Ye're richt, 'deed!" said Nathan. "It's just me, laird." "You must be a good age now, Nathan," said the Colonel. "I'm no verra aul' yet, laird," was the reply; "I'm just turn't a hunner." "A hundred!" said the Colonel, musing. "Well, you must be all that. But the idea of a man of a hundred sitting blubbering in that way! What could you get to cry about?" "It was my faither licket me, sir," said Nathan, weeping again, "an' he put me oot, so he did!" "Your father!" said the Colonel, astonished. "Is your father alive yet?" "Leevin'? Ay," replied Nathan, "I ken that the day tae my sorrow." "Where is he?" said the Colonel. "What an age he must be! I should like to see him." "Oh, he's up in the barn there," said Nathan, "an' no in a horrid gude humour the noo aither!" They went up to the farm together, and found the father busy threshing the barley with the big flail, and going on at a fearful rate. Seeing Nathan and the laird coming in, he stopped and saluted the Colonel, who, after inquiring how he was, asked him what he had struck Nathan for. "The young rascal," said the father, "there's nae dooin' wi' him; he's never oot o' mischief! I had tae lick him this mornin' for cloddin' stanes at his grandfather!"

Edin. Med. Journ. +

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## CORRESPONDENCE.

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### TREATMENT OF DIPHTHERIA.

(To the Editor of the *Edinburgh Medical Journal*.)

DEAR SIR,—The frequent appearance in medical journals of the different devices for the treatment of diphtheria shows that there exists among the minds of medical men a diversity of opinion as to what is the best method of attacking this treacherous malady.

The "puffing" into the patient's throat of sulphur—the most fashionable method—has the objection that it may cause a paroxysm of severe coughing in, may be, an already debilitated subject, besides being a proceeding attended with no little risk to the operator, although instruments have been invented which reduce this risk very much.

I have administered sulphur, after mixing it with honey to an ointment-like consistence, in two cases of true diphtheria with success—two children in the same house, treated by another medical man otherwise than by sulphur, having died. I have also used successfully the sulphur and honey in that infectious and severe sore throat called Diphtheria "circumscripta."

I direct that a piece about the size of two peas be placed in the mouth of the patient every hour or so. Being sweet it is easily given to children.

That I have not seen any account of sulphur being administered with honey in medical literature is my excuse for asking you to give this letter a place in the *Journal*.—I am, yours,

THOS. DOBSON POOLE, M.B. Ed.

POULTON-LE-FYLDE, Oct. 21st, 1890.

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### FLAT-FOOT.

(To the Editor of the *Edinburgh Medical Journal*.)

SIR,—Mr Miller has reprinted in the form of a pamphlet, which he has been good enough to send me, his papers from the *Journal* of November 1889 and September 1890. In the latter he states that I "honoured" him by noticing the former in my communication to the *Journal* of January 1890, and adds,—“I find that he and I are agreed as to the importance of the muscles of the leg in the proper treatment of flat-foot, and also as to the way in which they ought to be trained and strengthened.”

I wrote my *Notes*, as avowed in the introduction, *because* I differed from Mr Miller. *Inter alia*, I could not see any recognition of the "special importance of exercise" which he now, as stated in his preface, includes among "the main points" that he "would emphasize." The particular instance mentioned in the second paper as one in which we differ is very far from being the only one.

If I may judge by the extent to which my *Notes* have been copied at home and abroad, I must conclude that they have been regarded as of some importance. This is my apology for intruding on your space.—Very faithfully yours,

T. S. ELLIS.

6 CLARENCE STREET,  
GLOUCESTER, 22nd Oct. 1890.

## PROFESSOR KOCH'S REMEDY FOR TUBERCULOSIS.

(Continued from page 560.)

PROFESSOR KOCH's simple and masterly statement has been followed closely by several important communications of a more detailed nature from those whose experience in the application of the new method entitles them to speak with full authority. The *Deutsche Medicinische Wochenschrift* of November 20th contains four such papers from representatives of different departments of medicine. It will be my endeavour, in the limited time available before the publication of the December number of the *Edinburgh Medical Journal*, to supplement my brief *résumé* of Koch's original paper by an analysis of the results detailed in these, and a short statement of the impression which a visit to most of the clinics, where the work is being carried out, has made upon me.

Professor Fräntzel and Dr Runkwitz give the results of their application of the specific in the wards of the former in twelve cases of phthisis pulmonum. The cases are divided into two groups:—I. Very advanced cases, numbering four, in all of which both lungs were gravely involved, and signs of serious implication of the system generally existed. II. Less advanced cases, numbering eight, in all of which the physical signs of phthisis were well marked, and the sputum contained tubercle bacilli. The conclusions of these observers, after several weeks, are as follows: Group I. The injection did not succeed in preventing the advance of the process in any one case, although three of the patients showed definite signs of reaction to the fluid by rise of temperature. *Post-mortem* examination in two cases proved that, while there was no evident tendency towards recovery, a definite local change had occurred. Group II. In every case improvement was noted. This consisted in a gain of weight, varying from about two to ten pounds (after from two to eight weeks' treatment), loss of more urgent symptoms, such as night sweating, hæmoptysis, and cough, a diminution in the amount of the expectoration, and a diminution or disappearance of the tubercle bacilli, with a corresponding betterment of the patient's subjective condition and appetite, and in some instances a distinct alteration in the physical signs. In addition to these, there was noticed a manifest effect on the tubercle bacilli themselves, even when they did not disappear from the expectoration. *Firstly*, the bacilli were observed to become smaller and thinner, so that they were with greater difficulty distinguishable; *secondly*, some bacilli assumed a distinct biscuit form; *thirdly*, others were found broken into two pieces; and, *fourthly*, when not actually broken in two, they were manifestly disintegrated into



several fragments which remained fixed together like beads on a necklace.

From their results these observers are inclined to conclude that where there is manifest evidence of large vomicae less can be predicted of the method than might be hoped by the over sanguine. Regarding the *limits* of advancement, however, when the prognosis is to be regarded as less favourable under the system of Koch, the authors express some doubt, as the possibilities for observation have been yet too limited. And they point out further that it will not do to conclude that so soon as a patient has ceased to react to the specific that he is thenceforth cured, as the authors have observed cases where some time after the specific had ceased to cause reaction, an injection made after the lapse of some time induced a reaction, presumably from a process of auto-infection from some focus of the organism which had not been discharged by expectoration.

Professor Bergmann communicates the results of his experience in the surgical wards under his charge. The cases on which his statement rests are divided into four groups:—

I. Thirteen cases of tuberculosis of the skin and oral mucous membrane (including lupus).

II. Four cases of glandular tuberculosis.

III. Sixteen cases of tuberculosis of joints and bones.

IV. Four cases of laryngeal tuberculosis, and one or two of tuberculosis of the other organs.

His results may be shortly summarized thus:—

GROUP I.—Those cases showed, after injection, the characteristic general and local reaction, which has already been described by Koch. In particular, the local manifestations were watched with care, and consisted in redness, especially well marked in the periphery of the affected area, and swelling, often very considerable. Both the redness and swelling extended in varying degree in different cases beyond the affected area. After each repetition of the injection the local reaction became less evident. The original seat of the lupus gradually got covered over with crusts, sometimes of considerable thickness, which, where they were sufficiently advanced for removal or fell off, disclosed in a number of cases a perfectly smooth, delicate skin surface of red colour, like that of a fresh scar. In conclusion, Professor Bergmann cites a difficult case where he had been able to exclude, by means of a *diagnostic* injection, tuberculosis when other means of determining its nature had proved less certain.

GROUP II.—After the first injection the glands became more tender and swollen. As the treatment was continued the swelling diminished, till the glands became distinctly smaller than they had been prior to treatment.

GROUP III.—These included cases of hip-joint disease and of

similar affections of the knee, vertebræ, and extremities. In all there was distinct local reaction after injection. This was manifested by swelling, increase of tenderness, followed, in many cases where treatment had been of sufficiently long duration, by gradual improvement, shown by loss of local tenderness and of abnormal fixation, and increased power of movement without pain. Prof. Bergmann concludes that for such cases the method affords an important aid to the surgical methods (which will still be necessary) in the direction of limiting the extent of the disease, and thus making operative interference possibly less extensive, and certainly more certain in its results.

GROUP IV.—The injections had not been prosecuted sufficiently to admit of very definite statement. In one instance, however, after the second injection, the patient expectorated a mass which microscopic examination proved to consist of laryngeal tissue, with giant cells and tubercle bacilli.

Professor Bergmann draws particular attention to the diagnostic value of the method in connexion with this group, and illustrates it by a case, which he had regarded as a case of carcinoma of the left vocal cord, but where he thought it well to make the injection. The patient did not react to the maximal dose given to tubercular patients. He therefore believes that tuberculosis may be certainly excluded—a most important fact, when the difficulty of diagnosis of some laryngeal cases is remembered.

Professor Bergmann's general conclusion, then, from his extended experience, is that the *specific influence of the fluid on tubercular conditions is thoroughly well established*. To what extent it is curative further experience must be allowed to decide.

The third report is from the pen of Dr William Levy, who was the first to make trial of Koch's fluid on the living subject at the request of the latter. His observations date from the 22nd September, and in the earlier cases the dosage was fixed and regulated by Dr Koch himself. The class of disease was similar to those discussed in Prof. Bergmann's statement, and the general history of the cases, before and after the institution of the injections, is equally hopeful. Dr Levy adds some interesting facts in relation to the functional disturbances which occurred in those cases where organs such as the bladder, larynx, etc., were involved. In the case of the bladder, it is noted that after an injection at 10 A.M., there supervened, in the course of the afternoon, painful micturition, and towards evening, retention, the symptoms disappearing, however, in the course of the morning. Dr Levy reports on one laryngeal case only, but it is satisfactory to learn that no appreciable dyspnoea is recorded. Two children, with tubercular affection of the knee, and a man of forty, with articular tuberculosis of the left hand, have been dismissed as cured, and a boy, with tuberculosis of the metatarsal bones, appears to be in a fair

way to recovery. His lupus cases repeat the same story of success, in a greater or less degree of advancement, that has been already told. Dr Levy indicates that the method cannot, of course, replace all surgical procedure. Rest and fixation of diseased parts, the removal of dead tissue, and the repair of lost portions will, as before, require direct surgical treatment, but the method permits, for the first time, of a rational hope of success,—a hope based on the sound principle of eradication from the system of the essential cause of the disease. The diagnostic value of the method in doubtful cases is also emphasized.

Drs R. Köhler and Westphal report on twelve cases which have been under treatment in the extra ward of Dr Bardeleben's clinic,—lupus, tuberculosis of bones and joints, etc., and scars, ulcers, and wounds. In four cases, where a tubercular origin was otherwise presumably excluded, injection of the fluid afforded definitely *negative* results. The injection was followed by less or more marked constitutional symptoms according to the dosage, but in *no* case was there any local reaction at the seat of lesion. On the other hand, in the eight presumably tubercular cases the local reaction was decided. This was again most marked in lupus, where in two hours after the injection a feeling of burning and tension appeared, followed in five hours by redness and swelling, associated with a distinct exudation, which gradually accumulated in yellow drops, and finally formed into crusts. For two days the exudation continued, and the crusts grew in thickness, the redness and swelling gradually diminishing. In five days the crusts began to break up and fall off. By the ninth day they could be easily picked off, leaving a smooth, pale red surface exposed. In the case of bone and joint tuberculosis, definitely marked local symptoms manifested themselves from the first, and in some cases, soon after the injections were commenced, functional improvement was noted apart from surgical interference. A detailed statement of the progress of these eight cases is appended.

Regarding the constitutional effects of the remedy, these observers conclude:—1. That tubercular subjects react much more strongly than non-tubercular. 2. That a more or less well-marked rigor generally occurs about six hours after injection, followed by a rise of temperature to 104° F. or more. 3. That the temperature generally falls to the normal or below it within twenty-four hours. 4. That a repetition of the same dose gives rise to a less well-marked reaction. 5. That an increased dose is not by any means necessarily followed by a greater rise of temperature. 6. That apart from the rise of temperature, there is an increase of pulse rate, and, in many instances, there is induced a scarlatina like or similar rash, and in some an icteric tinge of the skin.

My own impressions may be described shortly, as much of what I should otherwise have stated has been included in the preceding

*résumé.* I have had an opportunity of visiting a considerable number of the institutions and clinics where the method is on trial, and have to acknowledge gratefully the courtesy which has been extended to all medical visitors. The physicians and surgeons and their assistants have been most willing to show their patients and to discuss the procedure, so far as their experience entitled them.

Speaking generally, one recognises two schools of thought. There is the highly sanguine disciple, who has been less or more directly associated with the practice of the method from the first, and there is the calmer and, perhaps, more critical observer, who prefers to suspend judgment until for himself he sees the prints and thrusts his hand into the wound.

Up to a certain limit all are agreed. There can be no possible doubt that the fluid, whatever its nature, has a *distinctly specific action on tubercular processes of all kinds*. There is further unanimity in the feeling that the method inaugurates a completely new departure in the treatment of tuberculosis, and, consequently, of all infectious diseases, and that the experimental and clinical results already obtained justify the belief that the method, which is the result of many years of most exact and patient investigation, possesses the permanency and potency of truth, however much the system may have to be elaborated.

As to the degree and kind of value to be predicated of the method, there seems divergence of opinion. Some enthusiasts have rashly exposed themselves to criticism by apparently sinking all other aspects of tubercular disease except that which has been established through Koch's earlier work. Thus, in some instances, I have seen patients with all the signs of very advanced phthisis allowed to stand for more than an hour in a crowded, ill-ventilated apartment, elbowed and jostled by the stronger or the curious, till, perhaps, half fainting, they have had to leave the room. Manifestly these are abuses which excitement and over-enthusiasm may explain, but cannot excuse. Very different from this reads the frank and prudent statement of Koch in his original paper: "In many cases I had the decided impression that the careful nursing bestowed on the patient had a considerable influence on the result of the treatment, and I am in favour of applying the remedy in proper sanatoria, as opposed to treatment at home and in the out-patient room.

The calmer scientific attitude is represented by some of the physicians and surgeons of the larger hospitals, who have begun the method more or less recently. They recognise the fact that tuberculosis had been already proved to be curable, as shown by *post mortem* reports and clinical observation, and they are unwilling to lay aside successful measures of treatment actually practised in their wards. They have, therefore, arranged in some instances parallel cases, some treated with, and others without, the new



remedy. The result of such comparison will be looked for with much interest.

Regarding its diagnostic value different views have been expressed. From its specific action on tubercular tissues, the least that can be said is that it will afford important corroboration of diagnosis, even when this may appear to rest on definitely ascertained data. But more than that must be admitted. As will be seen from the reports, the diagnostic injection has been *the* one determining element in several instances. One case I have just seen in the wards of Professor Leyden illustrates this point further. A girl had been admitted and treated for what appeared to be idiopathic pleurisy, and convalescence was well established. A trial injection was made two days ago, and it was found that she reacted generally, and that over the affected pleural cavity she experienced pain and other symptoms traceable to a local reaction. Such a case is most suggestive of fresh avenues of work regarding the relation existing between tubercular phthisis and other local lesions, whose etiology is still matter of discussion.

The general impression conveyed to my mind by a visit to the different wards is largely corroborative of the different reports referred to. We are entitled, in my opinion, to affirm that a hitherto inconceivable advance has been made in the treatment of tubercular conditions of all kinds, and that in lupus and in other more superficial affections, and in the earlier stages of phthisis, the method has been proved possessed of definitely curative power. Regarding more serious lesions and the more advanced stages of pulmonary disease, it is admitted by all that the time which has elapsed since the first injection was made—just two months ago—is too short to entitle one to predicate absolutely the limits of this curative efficacy.

The remarkable communications, of which I have given a digest, form an earnest of an immense mass of evidence which will soon be forthcoming when the collective results of Berlin investigation alone—now being conducted on a large scale—are given to the world.

R. W. PHILIP.

BERLIN, Nov. 24th, 1890.

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